# Extending a Geometric Pattern

Extend a geometric pattern.

**Review**    Answer key for this lesson is on the last page.

In some homes, floors and walls are covered with tiles set in a pattern. The tiles are set without overlaps or gaps.
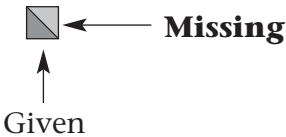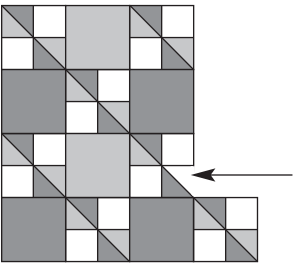
## Example A

Jahved is using this tile pattern for his bathroom floor. If the pattern continues as shown, which is the missing tile?

A) ☐         B) ◣         C) ◹         D) ◺

**STEP 1**    **Decide** on the **direction** of the triangles that make up that corner.

◨ This is the shape that makes up that corner.

◨ **or** ◧

**STEP 2**    Since you are given the dark triangle from the pair, **decide which triangle you are missing**.
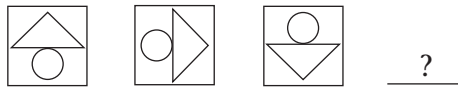
◨ ⟵ **Missing**

⬆
Given

So, we are missing the triangle ◹ in choice C.

**Review**

Some shapes are rotated or flipped in the pattern.

### Example B

Decide the fourth shape.



| | |
|---|---|
| **STEP 1** | Decide **how the first shape changes** in the pattern. |

 **turns 90° clockwise** to make .

| | |
|---|---|
| **STEP 2** | **Decide if** this **pattern works** for the rest of sequence. |

 **turns 90° clockwise** to make . **YES!**

| | |
|---|---|
| **STEP 3** | So, turn the last shape 90° clockwise to make the missing shape. |

 **turns 90° clockwise** to make .

So, the missing shape is .

**Review**

A polygon having all sides equal in length and all angles equal in measure is a **regular polygon**. There are many patterns in regular polygons.

### Example C

A diagonal is a line segment that joins two vertices of a polygon but is not a side. Find out how many diagonals there are in a 7-sided regular polygon.

**STEP 1**    Draw four regular polygons and their diagonals.



| triangle | square | pentagon | hexagon |
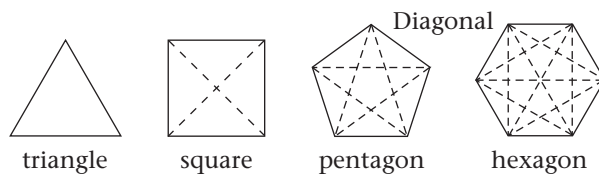
**STEP 2**    Make a table with the information from the figures. Look for a pattern between the numbers of diagonals.

| Number of Sides | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|
| Number of Diagonals | 0 | 2 | 5 | 9 | |

+2    +3    +4    +5

**STEP 3**    Extend the pattern by **adding 5** to the last known number of diagonals.

**9 + 5 = 14 diagonals**

So, a 7-sided regular polygon will have **14 diagonals**.

Extending a Geometric Pattern

Ivis is the manager of a supermarket. He wants to stack soup cans in layers for a display. How many soup cans does he need to create a 10-layer display?

To start, Ivis draws dot patterns for each layer of a four-layer display.



1st layer       2nd layer       3rd layer       4th layer
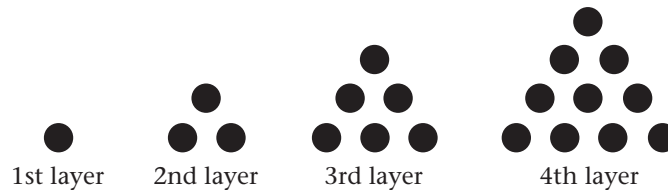
To see the pattern, Ivis makes a table.

|  | Number of Layers | Sum of Cans in Layer | Number of Cans in Layer |
|---|---|---|---|
| Layer 1 | 1 | 1 | 1 |
| Layer 2 | 2 | 1 + 2 | ☐ |
| Layer 3 | 3 | 1 + ☐ + ☐ | ☐ |
| Layer 4 | 4 | ☐ + ☐ + ☐ + ☐ | ☐ |

He sees that the number of soup cans in a layer is equal to the sum of the layer numbers.

Ivis adds the numbers from one to ten.

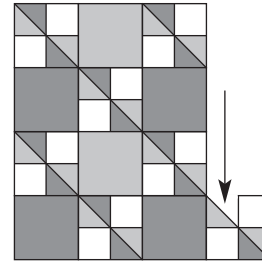1 + 2 + 3 + 4 + ☐ + ☐ + ☐ + ☐ + ☐ + ☐ = ☐
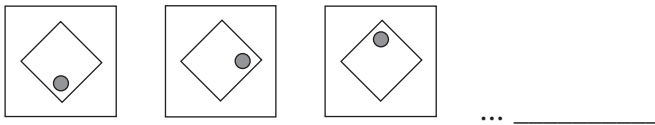
So, a 10-layer display needs ☐ cans of soup.

**Draw the missing figure in each pattern. Be sure to explain your answer. Use another sheet of paper if needed.**

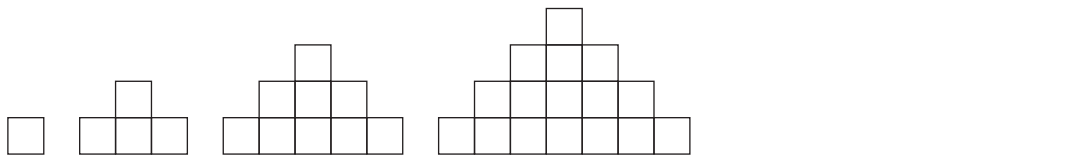1. Jahved is using this pattern for his kitchen floor. If the pattern continues as shown, what is the missing tile?
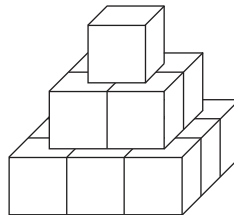
2. Draw the fifth shape.

   ... _____

3. Find the total number of diagonals that can be drawn from the corners of a 9-sided regular polygon.

4. Draw the fifth shape.

   _____

5. A store manager is making a display with boxes of tea. He stacks boxes as shown below.

   The top layer has one box of tea. The second layer has four boxes. The third layer has nine boxes, and so forth. How many boxes of tea will the manager need for the tenth layer in the display?

**1.**



Figure 1  Figure 2  Figure 3  Figure 4  Figure 5

Which figure shows the correct number of dots for Figure 4?

**A)**  **B)**  **C)**  **D)**

**2.** Jessica made the block pattern shown by gluing squares and squares cut on a diagonal to form 2 triangles onto a square area. She used multiple block patterns to form a strip that measured 12 inches × 6 feet. How many 6-inch floral squares did she cut to make the strip?

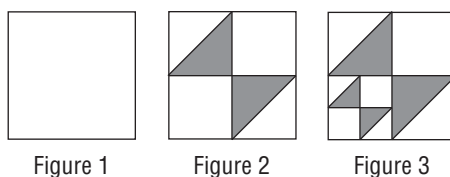**BLOCK**

**F)**  6 **G)**  10 **H)**  12 **J)**  36
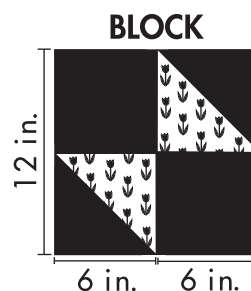
**3.** Debra is knitting a blanket according to this pattern. If the blanket pattern calls for 24 stripes, how many of the stripes will NOT be white?

**A)**  6 **B)**  8 **C)**  16 **D)**  24
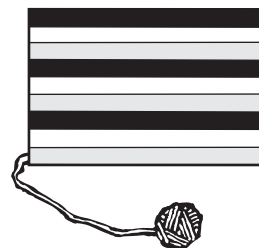
**4.** In this iterative pattern, the area of each bottom left white square is reduced by $\frac{1}{4}$ as shown to form the next figure.

Figure 1    Figure 2    Figure 3

If the pattern is continued, how many white squares will be shown in Figure 10?
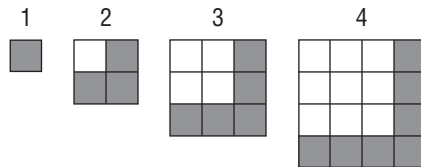
**F)**  10 **G)**  12 **H)**  20 **J)**  28

**5.** In this iterative pattern, the perimeter of each shaded square is reduced by $\frac{1}{2}$ to form the next figure. If the pattern is continued, Figure 4 will be what percent shaded?

Figure 1    Figure 2    Figure 3

**A)** 8%        **B)** 12.5%        **C)** 15.5%        **D)** 25%

**6.**
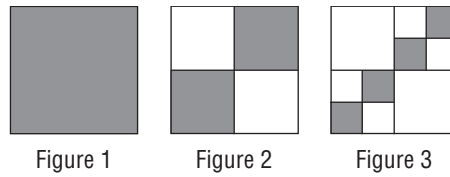
1    2        3            4

What would be the number of shaded squares in the 12th figure?

**F)** 23            **G)** 24            **H)** 25            **J)** 144

# A: Answer Key
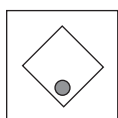
## Guided Practice

3
2 , 3, 6
1, 2, 3, 4, 10
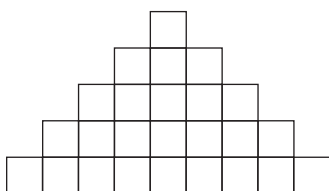5, 6, 7, 8, 9, 10, 55
55

## Practice

**1)** 

**2)** 

**3)** 27 diagonals

**4)** 

**5)** 100 boxes of tea

## Quiz

**1)** B 

**2)** F 6

**3)** C 16

**4)** F 10

**5)** B 12.5%

**6)** F 23

# Adding and Subtracting with Like Denominators

**Choose the correct letter for each answer.**

1. **Mr. Riley must build 10 birdhouses for his customers. So far he has completed $5\frac{3}{4}$ birdhouses. How many more birdhouses must he build?**

   A $15\frac{3}{4}$ birdhouses

   B $5\frac{1}{4}$ birdhouses

   C $4\frac{1}{4}$ birdhouses

   D $3\frac{3}{4}$ birdhouses

   E NH

2. **Becka ate $\frac{3}{12}$ of the bagels. Scott ate $\frac{5}{12}$ of the bagels. What fraction of the bagels did they eat?**

   F $\frac{1}{6}$        J $\frac{2}{3}$

   G $\frac{1}{2}$        K NH

   H $\frac{7}{12}$

3. $\frac{11}{12} + \frac{5}{12} =$

   A $\frac{1}{2}$        D $1\frac{1}{2}$

   B $1\frac{1}{3}$        E NH

   C $1\frac{5}{12}$

4. **Which sum is less than 1?**

   F $\frac{7}{10} + \frac{3}{10}$        H $\frac{2}{3} + \frac{2}{3}$

   G $\frac{3}{5} + \frac{3}{5}$        J $\frac{4}{15} + \frac{5}{15}$

5. **Erica bought $3\frac{1}{4}$ pounds of hamburger. Her meatloaf recipe needs $2\frac{3}{4}$ pounds of hamburger. How many pounds will she have left?**

   A $\frac{1}{4}$ pound        D $1\frac{1}{4}$ pounds

   B $\frac{1}{2}$ pound        E NH

   C $\frac{3}{4}$ pound

6. $7\frac{1}{3} - 2\frac{2}{3} =$

   F $3\frac{2}{3}$        J $5\frac{1}{3}$

   G $4\frac{1}{3}$        K NH

   H $4\frac{2}{3}$

7. **Kendall bought $3\frac{7}{8}$ yards of red ribbon and $2\frac{5}{8}$ yards of yellow ribbon. How much ribbon does Kendall have in all?**

   A $1\frac{1}{4}$ yards        D $6\frac{3}{4}$ yards

   B $5\frac{1}{2}$ yards        E NH

   C $6\frac{1}{4}$ yards

# Adding Fractions and Mixed Numbers: Like Denominators

**Choose the correct letter for each answer.**

1. $\frac{3}{4} + \frac{3}{4} =$

   A $\frac{1}{2}$         D $2\frac{1}{2}$

   B $1\frac{1}{4}$         E NH

   C $1\frac{1}{2}$

2. **Which mixed number is equal to $\frac{11}{3}$?**

   F $11\frac{1}{3}$         H $4\frac{2}{3}$

   G $9\frac{2}{3}$         J $3\frac{2}{3}$

3. **Mandy rode her bike $6\frac{1}{6}$ miles on Monday and $2\frac{5}{6}$ miles on Tuesday. How many miles did Mandy ride?**

   A  9 miles         D $4\frac{2}{3}$ miles

   B  8 miles         E NH

   C $8\frac{2}{3}$ miles

4. **Annette bought a $1\frac{2}{3}$ pound-bag of oranges and $1\frac{2}{3}$ pounds of bananas. How many pounds of fruit did she buy for her fruit salad?**

   F $2\frac{1}{3}$ pounds   J  4 pounds

   G $3\frac{1}{3}$ pounds   K NH

   H $3\frac{2}{3}$ pounds

5. $5\frac{3}{8}$
   $+ 2\frac{1}{8}$

   A $7\frac{1}{4}$         D $8\frac{1}{8}$

   B $7\frac{1}{2}$         E NH

   C $7\frac{5}{8}$

6. **Which mixed number shows $2\frac{7}{3}$ simplified?**

   F $2\frac{3}{8}$         H $4\frac{1}{3}$

   G $3\frac{4}{3}$         J $4\frac{2}{3}$

7. **June and her friends hiked $2\frac{5}{6}$ miles on one trail, then $3\frac{4}{6}$ miles on another. How far did they hike?**

   A $6\frac{1}{3}$ miles   D $6\frac{1}{6}$ miles

   B $6\frac{1}{6}$ miles   E NH

   C $5\frac{1}{3}$ miles

8. **Which mixed number is equal to $\frac{11}{4}$?**

   F $2\frac{3}{4}$         H $2\frac{3}{11}$
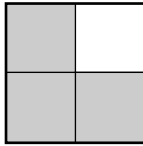
   G $2\frac{1}{4}$         J $1\frac{7}{11}$

# Relating Fractions and Decimals

**Choose the correct letter for each answer.**

1. **Which fraction and decimal describes the shaded part?**

   A  $\frac{1}{4}$ and 0.25

   B  $\frac{1}{2}$ and 0.5

   C  $\frac{3}{4}$ and 0.75

   D  $\frac{3}{4}$ and 0.3

2. **Which of the following is equal to $\frac{1}{4}$?**

   F  0.14      H  0.25

   G  0.20      J  0.40

3. **Shawn bought 0.5 pound of strawberries. Which fraction is equal to 0.5?**

   A  $\frac{1}{50}$      C  $\frac{5}{10}$

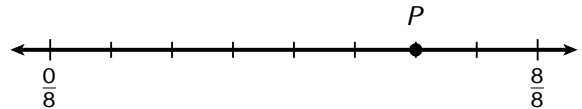   B  $\frac{1}{5}$      D  $\frac{50}{10}$

4. **Which of the following is equal to 0.2?**

   F  $\frac{2}{100}$      H  $\frac{1}{2}$

   G  $\frac{1}{5}$      J  $\frac{2}{1}$

5. **Which is a fraction and a decimal for 3 tenths?**

   A  $\frac{3}{100}$ and 0.03    C  $\frac{1}{3}$ and 0.3

   B  $\frac{3}{10}$ and 0.3     D  $\frac{3}{3}$ and 1

6. **Which is a fraction and a decimal for Point $P$?**

   F  $\frac{3}{8}$ and 0.375

   G  $\frac{4}{8}$ and 0.5

   H  $\frac{5}{8}$ and 0.75

   J  $\frac{6}{8}$ and 0.75

7. **Which is a decimal for 8 hundredths?**

   A  0.08      C  8.0

   B  0.8      D  800

8. **Which decimal describes the number of faces that are not smiling?**

   F  0.2      H  0.6

   G  0.25      J  0.75

# Mental Math: Patterns in Division

**Choose the correct letter for each answer.**

1. **3,200 ÷ 80 =**

   **A**  0.4      **D**  400
   **B**  4        **E**  NH
   **C**  40

2. **The school district has 27,000 students. How many classes of 30 students can the school district make?**

   **F**  9,000    **J**  9
   **G**  900      **K**  NH
   **H**  90

3. **A beekeeper has about 50,000 bees. If 500 bees are placed in each hive, how many hives will be needed?**

   **A**  1        **D**  1,000
   **B**  10       **E**  NH
   **C**  100

4. **Which is the value of _n_?**
   **600 ÷ _n_ = 20**

   **F**  _n_ = 3      **H**  _n_ = 300
   **G**  _n_ = 30     **J**  _n_ = 580

5. **A $2,400 first prize will be divided among 8 winners. How much will each winner receive?**

   **A**  $3        **D**  $3,000
   **B**  $30       **E**  NH
   **C**  $300

6. **A convention hall was filled with 6,300 balloons. It took a crew of 70 people to fill them with helium. If each person inflated the same number of balloons, how many did each person fill?**

   **F**  90 balloons
   **G**  900 balloons
   **H**  9,000 balloons
   **J**  90,000 balloons
   **K**  NH

7. **A factory made 2,100 tools in 30 days. If the same number of tools were made each day, how many tools were made in one day?**

   **A**  7 tools     **D**  7,000 tools
   **B**  70 tools    **E**  NH
   **C**  700 tools

8. **3,000 ÷ 60 =**

   **F**  5        **J**  5,000
   **G**  50       **K**  NH
   **H**  500

# Multiplying Greater Numbers

**Choose the correct letter for each answer.**

**1.**   205
     × 303

A   62,115       D   1,230

B   7,575        E   NH

C   6,765

**2.** The movie theater sold 892 adult tickets Friday night. Each ticket cost $6.75. How much did the theater make on adult tickets on Friday night?

F   $669.00      J   $6,021.00

G   $1,021.00    K   NH

H   $6,020.75

**3.** The zoo sold 625 stuffed animals in May. Each stuffed animal cost $8.95. How much did the zoo make on the stuffed animals?

A   $4,593.75    D   $5,693.85

B   $5,593.75    E   NH

C   $5,693.75

**4.** 530 × 91 =

F   53,000       J   4,823

G   48,230       K   NH

H   5,300

**5.** A restaurant pays $4.99 for a pound of salmon. This week the restaurant bought 125 pounds. What was the total cost of the salmon?

A   $39.92       D   $622.75

B   $124.75      E   NH

C   $613.75

**6.**   962
     × 893

F   89,466       J   869,066

G   839,066      K   NH

H   859,066

**7.** The grocery store ordered 175 pints of strawberries. They will sell each pint for $3.19. How much will they get if they sell all the strawberries?

A   $538.25      D   $558.25

B   $548.25      E   NH

C   $557.25

**8.** 343 × 222 =

F   7,546        J   78,148

G   76,146       K   NH

H   76,156

# Multiplying by One-Digit and Two-Digit Numbers

**Choose the correct letter for each answer.**

1. **Brendan read every day for 17 days. Each day he read 32 pages. How many pages did he read in all?**

   **A**  544 pages  **D**  256 pages
   **B**  534 pages  **E**  NH
   **C**  424 pages

2. **289 × 47 =**

   **F**  3,179  **J**  13,683
   **G**  12,723  **K**  NH
   **H**  13,583

3. **A pair of batting gloves cost $7.35. How much will 15 pairs cost?**

   **A**  $108.25  **D**  $110.30
   **B**  $110.05  **E**  NH
   **C**  $110.25

4. **A box contains 1,248 napkins. How many napkins are in 27 boxes?**

   **F**  11,232 napkins
   **G**  23,596 napkins
   **H**  33,596 napkins
   **J**  33,696 napkins
   **K**  NH

5. **Corey earns $6.75 an hour working at a tile store. He works 24 hours each week. How much does Corey earn per week?**

   **A**  $40.50  **D**  $162.00
   **B**  $54.00  **E**  NH
   **C**  $160.80

6.

   | Oak City Trains | |
   |---|---|
   | **Train Route** | **Number of Trips per Week** |
   | A | 258 |
   | B | 311 |
   | C | 609 |
   | D | 472 |

   **If Train C carries 47 people each trip, how many passengers will it carry in a week?**

   **F**  28,576 passengers
   **G**  28,623 passengers
   **H**  28,693 passengers
   **J**  28,923 passengers
   **K**  NH

7. **84 × 36 =**

   **A**  3,034  **D**  756
   **B**  3,018  **E**  NH
   **C**  3,014

# Adding and Subtracting Greater Whole Numbers

**Choose the correct letter for each answer.**

1.  72,189
    + 23,556

    A   96,635      D   45,633

    B   95,745      E   NH

    C   95,635

2.  **William scores 79,890 points on a computer game. Sarah scores 58,009 points. How many more points did William score than Sarah?**

    F   21,881 points

    G   21,891 points

    H   21,899 points

    J   137,899 points

    K   NH

3.  **36,042 + 7,898 =**

    A   33,940

    B   43,830

    C   43,930

    D   43,940

    E   NH

4.  **74,239 − 14,855 =**

    F   89,094      J   59,384

    G   60,624      K   NH

    H   59,624

5.  **Juan and Chris are partners. What is their total score?**

    A   66,033

    B   58,878

    C   37,976

    D   37,958

    E   NH

    | Score Sheet | |
    |---|---|
    | **Game** | **Score** |
    | Sean | 35,908 |
    | Chris | 22,970 |
    | Juan | 14,988 |
    | Tamika | 43,063 |
    | Yo | 12,309 |

6.  62,005
    − 11,003

    F   51,002      J   71,002

    G   51,008      K   NH

    H   53,002

7.  **4,445 + 821 + 5,966 =**

    A   10,411      D   11,332

    B   11,132      E   NH

    C   11,232

8.  **Jermaine has 45,334 points on a computer game. Tyler has 5,899 points. How many more points does Jermaine have?**

    F   39,335      J   40,565

    G   39,435      K   NH

    H   40,465

# Rounding Decimals

**Choose the correct letter for each answer.**

1. **Which shows 51.01 rounded to the nearest whole number?**

   **A** 50      **D** 52

   **B** 51      **E** NH

   **C** 51.1

2. **Which shows 18.64 rounded to the nearest tenth?**

   **F** 18.6     **J** 20

   **G** 18.7     **K** NH

   **H** 19

3. **Courtney bought 8.26 pounds of hamburger for the cook-out. Which shows 8.26 rounded to the nearest whole number?**

   **A** 7       **D** 9

   **B** 8.3     **E** NH

   **C** 8

4. **Sam can hold his breath for 20.6 seconds. Which is the number rounded to the nearest second?**

   **F** 20      **J** 22

   **G** 20.6    **K** NH

   **H** 21

5. **When rounded to the nearest tenth, which number would not be rounded to 38.2?**

   **A** 38.24    **C** 38.18

   **B** 38.21    **D** 38.13

6. **It is 36.66 miles from Steven's house to the city park. Which shows 36.66 rounded to the nearest tenth?**

   **F** 36      **J** 37

   **G** 36.6    **K** NH

   **H** 36.7

7. **Jennifer was 58.7 inches tall on her last birthday. What is this number rounded to the nearest inch?**

   **A** 59

   **B** 58.3

   **C** 58

   **D** 57

   **E** NH

8. **Which shows 1.65 rounded to the nearest tenth?**

   **F** 1.6

   **G** 1.7

   **H** 1.65

   **J** 1.66

   **K** NH

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   **J** 1.66

   **K** NH

# Decimal Place Value

**Choose the correct letter for each answer.**

1. **Which is the word name for this number: 3.62?**

   **A** Three and sixty-two hundredths

   **B** Three hundred sixty-two hundredths

   **C** Three and sixty-two tenths

   **D** Three hundred sixty-two tenths

2. **Ashley has sixty-three cents. Which is this amount written as a decimal?**

   **F** $0.063          **H** $6.03

   **G** $0.63          **J** $6.30

3. **Patrick said that the rain gauge shows 4.68 inches of rain. What is the place value of the 8 in 4.68?**

   **A** Tens          **C** Tenths

   **B** Ones          **D** Hundredths

4. **Which decimal number has an 8 in the tens place, a 4 in the ones place, a 6 in the hundredths place, and a 1 in the tenths place?**

   **F** 684.1          **H** 84.16

   **G** 84.61          **J** 48.16

5. **A strawberry weighing 8.17 ounces was grown in England in 1983. What is the value of the digit 1 in 8.17?**

   **A** Tens          **C** Tenths

   **B** Ones          **D** Hundredths

6. **Which number shows the decimal 6 and 2 hundredths?**

   **F** 0.062          **H** 6.02

   **G** 0.62          **J** 6.2

7. **Which is the word name for this number: 17.14?**

   **A** Seven and fourteen hundredths

   **B** Seventeen and fourteen

   **C** Seventeen and fourteen tenths

   **D** Seventeen and fourteen hundredths

8. **Used skates cost $13.97. How much money is represented by the digit in the hundredths place?**

   **F** 10 dollars

   **G** 3 dollars

   **H** 7 cents

   **J** 9 cents

# Zeros in the Quotient

**Choose the correct letter for each answer.**

---

1. **503 ÷ 5 =**

   **A**   101 R2     **D**   1 R3

   **B**   100 R3     **E**   NH

   **C**   10 R3

---

2. **There are 918 train cars and 9 engines. If trains of equal length are made, how many cars will each engine pull?**

   **F**   12 cars

   **G**   102 cars

   **H**   112 cars

   **J**   120 cars

   **K**   NH

---

3. **3)2,106**

   **A**   7,002     **D**   72

   **B**   720      **E**   NH

   **C**   702

---

4. **The Natural History Museum showed a movie about insects 3 times to a total of 903 people. The same number of people watched the movie each time. How many people saw each showing?**

   **F**   350 people

   **G**   310 people

   **H**   305 people

   **J**   301 people

   **K**   NH

---

5. **6)9,012**

   **A**   1,520     **D**   152

   **B**   1,502     **E**   NH

   **C**   1,002

---

6. **The TV reporter made 3 round trips to the Capitol, driving a total of 612 miles. How long was each round trip?**

   **F**   203 miles     **J**   204 R2 miles

   **G**   204 miles     **K**   NH

   **H**   204 R1 miles

---

7. **A bus carries passengers between two cities twice each day. At the end of the day, the bus has traveled 432 miles. How many miles apart are the cities?**

   **A**   180 miles

   **B**   108 miles

   **C**   18 miles

   **D**   10 miles

   **E**   NH

---

8. **814 ÷ 2 =**

   **F**   470

   **G**   447

   **H**   407

   **J**   47

   **K**   NH

# Estimating Quotients

**Choose the correct letter for each answer.**

---

1. Judy makes trail mix with 6 cups of dried kiwi fruit. About how many bags could she make with 425 cups of kiwi fruit?

   A   About 80 bags

   B   About 70 bags

   C   About 60 bags

   D   About 50 bags

---

2. Estimate $237 \div 4$.

   F   40

   G   50

   H   60

   J   70

---

3. The Jackson family spent 7 days driving from New York City to Seattle, Washington, a distance of 3,415 miles. Which is the best estimate of the average number of miles they drove each day?

   A   About 300 miles

   B   About 350 miles

   C   About 500 miles

   D   About 600 miles

---

4. Estimate $5\overline{)444}$.

   F   9          H   80

   G   70         J   90

---

5. The Grand Canyon is 1,185 miles away from Neva's house. She and her family would like to drive there in 4 days. Which is the best plan for how many miles per day they should drive?

   A   About 30 miles

   B   About 50 miles

   C   About 300 miles

   D   About 350 miles

---

6. The nursery has 486 geraniums, which are kept on 6 tables. There are the same number on each table. About how many geraniums are on each table?

   F   About 50 geraniums

   G   About 60 geraniums

   H   About 70 geraniums

   J   About 80 geraniums

---

7. Estimate $31 \div 8$.

   A   4          C   6

   B   5          D   7

---

8. Estimate $9\overline{)552}$.

   F   50         H   70

   G   60         J   80

# Dividing Two-Digit Numbers

**Choose the correct letter for each answer.**

1. $42 \div 3 =$

   A   12

   B   13

   C   14

   D   15

2. $7\overline{)77}$

   F   8          J   13

   G   10         K   NH

   H   12

3. Meridith has 36 eggs. She needs 3 eggs for one batch of cookies. How many batches of cookies can she make?

   A   12 batches      D   19 batches

   B   13 batches      E   NH

   C   15 batches

4. Florence made 84 pot holders for the craft show. The pot holders are sold in sets of 4 each. How many sets of pot holders did Florence make?

   F   10 sets

   G   20 sets

   H   21 sets

   J   23 sets

   K   NH

5. Ninety-one stuffed animals are sent to 7 hospitals. Each hospital receives the same number of animals. How many animals does each hospital receive?

   A   10 animals

   B   13 animals

   C   14 animals

   D   15 animals

   E   NH

6. Cloyd collected 72 different postcards while on vacation. He put 6 on each page of his scrapbook. How many pages will Cloyd need to put all the postcards in his scrapbook?

   F   12 pages      J   423 pages

   G   13 pages      K   NH

   H   14 pages

7. $65 \div 5 =$

   A   12          D   15

   B   13          E   NH

   C   14

8. $2\overline{)58}$

   F   24          J   116

   G   27          K   NH

   H   34

# Mental Math: Dividing Multiples of 10, 100, and 1,000

**Choose the correct letter for each answer.**

1. 630 ÷ 7

   A   7          D   90

   B   9          E   NH

   C   70

2. The bakery uses 560 cups of flour to make bread each day. If each loaf of bread needs 7 cups of flour, how many loaves does the bakery bake each day?

   F   60 loaves     J   90 loaves

   G   70 loaves     K   NH

   H   80 loaves

3. A jet traveled 4,200 miles in 6 hours. It went the same number of miles each hour. What was the jet's speed in miles per hour?

   A   70 miles per hour

   B   170 miles per hour

   C   700 miles per hour

   D   770 miles per hour

   E   NH

4. 16,000 ÷ 4

   F   4

   G   40

   H   400

   J   4,000

   K   NH

5. 3)90

   A   30         D   300

   B   60         E   NH

   C   90

6. There were 2,000 people who applied for the job openings at Great Foods. The company plans to interview the same number of people each day for 5 days. How many people will Great Foods interview each day?

   F   400 people   J   20 people

   G   200 people   K   NH

   H   40 people

7. A machine puts 8 flashlight batteries in each package. In one hour, the machine packed 640 batteries. How many packages of flashlight batteries did the machine fill in that hour?

   A   8 packages    D   140 packages

   B   80 packages   E   NH

   C   90 packages

8. 6)4,800

   F   8          J   8,000

   G   80         K   NH

   H   800

# Multiplying Greater Numbers

**Choose the correct letter for each answer.**

1. **553 × 21 =**

   A   1,613       D   11,613

   B   1,659       E   NH

   C   10,613

2. **Mrs. Montoya ordered a calculator for every student in her class. She ordered 23 calculators for $12.95 each. How much was her order?**

   F   $64.75       J   $298.35

   G   $296.85      K   NH

   H   $297.85

3. **4,286**
   **×    17**

   A   34,288       D   75,262

   B   72,862       E   NH

   C   72,876

4. **Alex has 45 boxes of baseball cards. Each box has 225 baseball cards. How many cards does Alex have in all?**

   F   9,000 cards   J   10,125 cards

   G   9,905 cards   K   NH

   H   9,925 cards

5. **426**
   **× 23**

   A   9,372       D   10,224

   B   9,698       E   NH

   C   9,798

6. **Each section of the arena seats 1,876 people. The arena has 22 sections. How many people can sit in the arena?**

   F   7,504 people

   G   36,286 people

   H   38,372 people

   J   41,274 people

   K   NH

7. **$68.23 × 32 =**

   A   $341.15       D   $2,183.36

   B   $1,973.36     E   NH

   C   $1,983.36

8. **204 × 89 =**

   F   3,468       J   165,036

   G   3,756       K   NH

   H   18,156

Name_____

# Multiplying by a Multiple of Ten

**Choose the correct letter for each answer.**

1. **Each box is 20 centimeters tall. There are 18 boxes in each stack. How tall is each stack?**

   A   90 centimeters

   B   120 centimeters

   C   180 centimeters

   D   360 centimeters

   E   NH

2.   **959**
   **× 90**

   F   86,319          J   81,459

   G   86,310          K   NH

   H   85,680

3. **4,632 × 40 =**

   A   164,280          D   185,560

   B   184,280          E   NH

   C   185,280

4. **There are 30 dozen eggs in 1 case. There are 12 eggs in a dozen. How many eggs are in 1 case?**

   F   36 eggs

   G   144 eggs

   H   288 eggs

   J   360 eggs

   K   NH

5. **A nursery has 245 rows of shrubs. Each row has 20 shrubs. How many shrubs are there in all?**

   A   490 shrubs

   B   4,800 shrubs

   C   4,900 shrubs

   D   5,000 shrubs

   E   NH

6.   **1,937**
   **×    50**

   F   96,850          J   55,550

   G   96,550          K   NH

   H   94,850

7. **A store sold 314 sweatshirts. Each sweatshirt sold for $20. How much money did the store get from selling the sweatshirts?**

   A   $6,240          D   $6,820

   B   $6,280          E   NH

   C   $6,460

8. **76 × 80 =**

   F   608          J   6,160

   G   5,660          K   NH

   H   6,080

# Estimating Products

**Choose the correct letter for each answer.**

1. **One package contains 39 animal stickers. About how many animal stickers are in 22 packages?**

   **A** About 400 stickers

   **B** About 800 stickers

   **C** About 8,000 stickers

   **D** About 9,000 stickers

2. **The zoo ordered 28 cases of lettuce. Each case of lettuce contained 18 heads of lettuce. About how many heads of lettuce did the zoo order?**

   **F** About 60 heads of lettuce

   **G** About 80 heads of lettuce

   **H** About 600 heads of lettuce

   **J** About 800 heads of lettuce

3. **Estimate 817 × 89.**

   **A** 6,400      **C** 64,000

   **B** 7,200      **D** 72,000

4. **Which is the most reasonable estimate of 42 × 73?**

   **F** 180        **H** 2,100

   **G** 1,800      **J** 2,800

5. **At one level in a computer game, each target hit scores 82 points. Beverly hit 27 targets at that level. About how many points did Beverly score?**

   **A** About 240 points

   **B** About 2,400 points

   **C** About 24,000 points

   **D** About 240,000 points

6. **Estimate 7,298 × 37.**

   **F** 210,000     **H** 280,000

   **G** 240,000     **J** 320,000

7. **Estimate 59 × 347.**

   **A** 18,000      **C** 180,000

   **B** 24,000      **D** 240,000

8. **There are 24 hours in one day. There are 365 days in one year. About how many hours are there in one year?**

   **F** About 6,000 hours

   **G** About 8,000 hours

   **H** About 60,000 hours

   **J** About 80,000 hours

# Estimating Products

**Choose the correct letter for each answer.**

1. **There are 1,092 pens in 1 crate. About how many pens are in 4 crates?**

   **A**   About 1,000 pens

   **B**   About 2,000 pens

   **C**   About 3,000 pens

   **D**   About 4,000 pens

2. **One row has 21 seats. About how many seats are in 8 rows?**

   **F**   About 160 seats

   **G**   About 140 seats

   **H**   About 80 seats

   **J**   About 60 seats

3. **Estimate 6 × 394.**

   **A**   24          **C**   2,400

   **B**   240         **D**   24,000

4. **A bus went 3,847 miles in one week. If the bus traveled the same path each week, about how many miles would it travel in 3 weeks?**

   **F**   About 1,200 miles

   **G**   About 9,000 miles

   **H**   About 12,000 miles

   **J**   About 90,000 miles

5. **If one box of paper costs $17.98, about how much would 5 boxes of paper cost?**

   **A**   About $100.00

   **B**   About $50.00

   **C**   About $45.00

   **D**   About $40.00

6. **Estimate 9 × 83.**

   **F**   7

   **G**   72

   **H**   720

   **J**   7,200

7. **Which is the most reasonable estimate of 7 × $9.28?**

   **A**   $61.00

   **B**   $63.00

   **C**   $68.00

   **D**   $70.00

8. **Estimate 963 × 2.**

   **F**   200

   **G**   1,600

   **H**   1,800

   **J**   2,000

# Decimals in Hundredths

**Choose the correct letter for each answer.**

1. **Which decimal is shown by the shaded part of the diagram?**
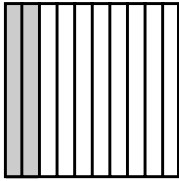
   **A** 0.3      **C** 3.2

   **B** 0.2      **D** 0.032

2. **In which number does a 6 have a value of 6 hundredths?**

   **F** 600.15      **H** 6.87

   **G** 0.60      **J** 1.96

3. **Maggie had 47 pennies in her bank. Which decimal shows how much money Maggie has?**

   **A** $0.047      **C** $4.70

   **B** $0.47      **D** $47.00

4. **What is 7 hundredths in decimal form?**

   **F** 7.00      **H** 0.07

   **G** 0.7      **J** 0.007

5. **Which is $\frac{82}{100}$ written as a decimal?**

   **A** 0.082      **C** 8.2

   **B** 0.82      **D** 82.0

6. **Jeanette made the following design. What part of the design is white?**
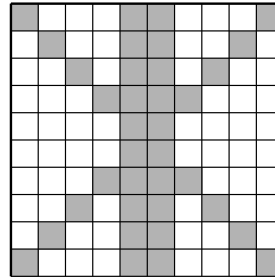
   **F** 3.6      **H** 0.50

   **G** 0.64      **J** 0.36

7. **Before lunch, there were 100 containers of yogurt. After lunch, there were 36 containers left. What decimal shows the part of the yogurt that were left?**

   **A** 36.0      **C** 0.36

   **B** 3.60      **D** 0.036

8. **Which decimal is shown by the shaded part of the diagram?**
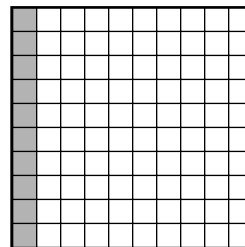
   **F** 10.0      **H** 0.10

   **G** 1.0      **J** 0.001

# Decimals in Tenths

**Choose the correct letter for each answer.**

1. **Which decimal is shown by the shaded part of the diagram?**
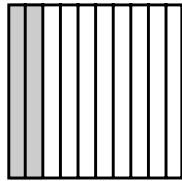
   A   0.02        C   0.8
   B   0.2         D   2.0

2. **Six out of the 10 boys brought a packed lunch on the field trip. Which decimal shows what part of the boys brought a packed lunch?**

   F   6.0         H   0.4
   G   0.6         J   0.06

3. **Which number shows the decimal four and six tenths?**

   A   46.0        C   4.6
   B   40.6        D   4.06

4. **Which is $\frac{5}{10}$ written as a decimal?**

   F   0.005       H   0.5
   G   0.05        J   50

5. **Find the decimal for five and four tenths.**

   A   0.54        C   54
   B   5.4         D   540

6. **Which decimal is shown by the shaded part of the diagram?**
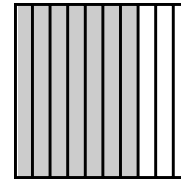
   F   0.3         H   3.7
   G   0.7         J   7.3

7. **Chris bought 10 roses for his mother. Three of the roses were white. Five of the roses were pink, and the rest of the roses were red. Which decimal shows what part of the roses were red?**

   A   0.5         C   0.2
   B   0.3         D   0.1

8. **Which is $1\frac{1}{10}$ written as a decimal?**

   F   0.1         H   1.01
   G   1.0         J   1.1

# Finding Equivalent Fractions

**Choose the correct letter for each answer.**

1. **Use the fraction models. Which number belongs in the ■?**
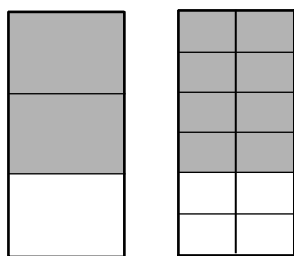
$$\frac{2}{3} = \frac{\blacksquare}{12}$$

   A   2          C   6
   B   4          D   8

2. **Use the fraction models. Which fraction number belongs in the ■?**
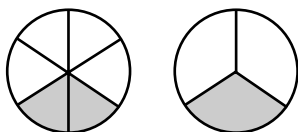
$$\frac{2}{6} = \frac{\blacksquare}{3}$$

   F   1          H   3
   G   2          J   4

3. **Which fraction is equivalent to $\frac{1}{4}$?**

   A   $\frac{2}{5}$          C   $\frac{3}{12}$
   B   $\frac{4}{1}$          D   $\frac{4}{8}$

4. **Use the fraction models. Which number belongs in the ■?**
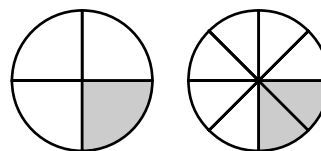
$$\frac{1}{4} = \frac{\blacksquare}{8}$$

   F   1          H   3
   G   2          J   6

5. **Lou ate $\frac{3}{5}$ of his sandwich. Martha ate the same amount of her sandwich. How many tenths did Martha eat?**

   A   $\frac{2}{10}$          C   $\frac{6}{10}$
   B   $\frac{4}{10}$          D   $\frac{8}{10}$

6. **Use the fraction models. Which number belongs in the ■?**

$$\frac{1}{2} = \frac{\blacksquare}{8}$$

   F   1
   G   2
   H   3
   J   4

# Dividing Greater Numbers

**Choose the correct letter for each answer.**

1. $6\overline{)3,156}$

   A 326  D 536
   B 494  E NH
   C 526

2. **Duane wants to put his 549 baseball cards in 9 albums. He wants the same number in each album. How many cards should he put in each album?**

   F 63 cards  J 60 cards
   G 62 cards  K NH
   H 61 cards

3. **The Sneaker Store has 2,912 pairs of shoes stored in the back. If there are 8 rows and each row has an equal number of shoes, how many pairs are in each row?**

   A 278 pairs  D 464 pairs
   B 364 pairs  E NH
   C 384 pairs

4. **2,364 ÷ 4 =**

   F 491  J 691
   G 526  K NH
   H 591

5. **A carrying case holds 5 CDs. How many cases would be needed to hold 235 CDs?**

   A 470 cases  D 45 cases
   B 47 cases  E NH
   C 6 cases

6. $7\overline{)9,247}$

   F 132  J 1,321
   G 321  K NH
   H 1,131

7. **562 ÷ 2**

   A 281  D 181
   B 271  E NH
   C 231

8. **A nursery has 864 tomato sprouts. If they put 3 sprouts in each planter, how many planters can they fill?**

   F 222 planters
   G 236 planters
   H 268 planters
   J 288 planters
   K NH

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**Choose the correct letter for each answer.**

1. $6\overline{)3,156}$

   A   326          D   536
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2. **Duane wants to put his 549 baseball cards in 9 albums. He wants the same number in each album. How many cards should he put in each album?**

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   C   384 pairs

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   G   526          K   NH
   H   591

5. **A carrying case holds 5 CDs. How many cases would be needed to hold 235 CDs?**

   A   470 cases    D   45 cases
   B   47 cases     E   NH
   C   6 cases

6. $7\overline{)9,247}$

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   G   321          K   NH
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   J   288 planters
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   F   222 planters
   G   236 planters
   H   268 planters
   J   288 planters
   K   NH

# Dividing Two-Digit Numbers

**Choose the correct letter for each answer.**

1. **Carlos is dividing 39 marbles evenly among 3 friends. How many will each friend get?**

   **A** 15 marbles    **D** 3 marbles

   **B** 13 marbles    **E** NH

   **C** 11 marbles

2. **85 ÷ 5 =**

   **F** 11       **J** 17

   **G** 13       **K** NH

   **H** 15

3. **9)‾99‾**

   **A** 1       **D** 11

   **B** 9       **E** NH

   **C** 10

4. **There are 64 crackers in a box. Cecil puts 4 crackers in each bag. How many bags does Cecil need to use all the crackers in the box?**

   **F** 10 bags    **J** 18 bags

   **G** 12 bags    **K** NH

   **H** 16 bags

5. **A grocer ordered 6 frozen turkeys. The turkeys weighed a total of 84 pounds. If each frozen turkey weighed the same number of pounds, how much did each turkey weigh?**

   **A** 54 pounds    **D** 13 pounds

   **B** 16 pounds    **E** NH

   **C** 14 pounds

6. **91 ÷ 7 =**

   **F** 12       **J** 15

   **G** 13       **K** NH

   **H** 14

7. **A movie pass allows 2 people to see a movie. How many passes are needed if 32 people want to see a movie?**

   **A** 19 passes    **D** 11 passes

   **B** 18 passes    **E** NH

   **C** 16 passes

8. **8)‾96‾**

   **F** 11       **J** 17

   **G** 13       **K** NH

   **H** 15

# Estimating Quotients

**Choose the correct letter for each answer.**

**1.** Which is the most reasonable estimate of 273 ÷ 4?

A  60      C  80

B  70      D  90

**2.** Estimate 460 ÷ 9.

F  50      H  70

G  60      J  80

**3.** The builders have 236 bricks. They want to make 8 stacks about the same height. About how many bricks should be in each stack?

A  About 8 bricks

B  About 10 bricks

C  About 20 bricks

D  About 30 bricks

**4.** Carl's baby sister is 212 days old. There are 7 days in a week. About how many weeks old is the baby?

F  About 10 weeks old

G  About 20 weeks old

H  About 30 weeks old

J  About 40 weeks old

**5.** There are 578 party favors in a bag. They will be divided among 9 party guests. About how many favors will each guest get?

A  About 100 favors

B  About 80 favors

C  About 60 favors

D  About 10 favors

**6.** Estimate 44 ÷ 6.

F  4      H  6

G  5      J  7

**7.** If Elsie pours 29 cups of juice equally into 3 pitchers, about how many cups will be in each pitcher?

A  About 10 cups

B  About 9 cups

C  About 8 cups

D  About 7 cups

**8.** Estimate 321 ÷ 5.

F  6      H  70

G  60      J  80

# Estimating Quotients

**Choose the correct letter for each answer.**

**1.** Which is the most reasonable estimate of 273 ÷ 4?

  **A** 60       **C** 80

  **B** 70       **D** 90

**2.** Estimate 460 ÷ 9.

  **F** 50       **H** 70

  **G** 60       **J** 80

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**F** 6      **H** 70
**G** 60      **J** 80

# Mental Math: Division Patterns

**Choose the correct letter for each answer.**

1. **720 ÷ 9 =**

   A   8,000          D   8
   B   800            E   NH
   C   80

2. **Alfie had 280 booklets. He placed them into 7 equal stacks. How many booklets were in each stack?**

   F   14 booklets    J   50 booklets
   G   20 booklets    K   NH
   H   30 booklets

3. **An airplane flew 5,400 miles in 9 hours. It flew the same number of miles each hour. How many miles did the plane fly in 1 hour?**

   A   6 miles        D   6,000 miles
   B   60 miles       E   NH
   C   600 miles

4. **2,800 ÷ 4 =**

   F   7,000          J   7
   G   700            K   NH
   H   70

5. **Groups of 5 people can go through an exhibit at the same time. How many trips will it take for 250 people to go through the exhibit?**

   A   50 trips       D   500 trips
   B   245 trips      E   NH
   C   255 trips

6. **There were 90 singers in a choir. The leader separated them into 3 equal groups of altos, sopranos, and tenors. How many altos were in the choir?**

   F   27 altos       J   300 altos
   G   30 altos       K   NH
   H   270 altos

7. **3,600 ÷ 6 =**

   A   6,000          D   6
   B   600            E   NH
   C   60

8. **A patient takes 2,400 mg of medicine a day. The medicine is taken in three equal doses. How much medicine does the patient take in each dose?**

   F   8 mg           J   800 mg
   G   80 mg          K   NH
   H   300 mg

# Multiplying Three-Digit Numbers

**Choose the correct letter for each answer.**

1. **Mr. Garcia pays $112 each month for his commuter train ticket. How much does he pay in 4 months?**

   A  $148        D  $558
   B  $448        E  NH
   C  $458

2. **724**
   **× 5**

   F  3,500        J  3,620
   G  3,520        K  NH
   H  3,600

3. **Ed treated his friends to lunch. He bought himself and 2 friends a hamburger each. If the hamburgers were $3.75 each, how much did Ed spend on lunch?**

   A  $7.50        D  $15.00
   B  $11.25       E  NH
   C  $12.25

4. **311**
   **× 8**

   F  303          J  2,488
   G  319          K  NH
   H  2,419

5. **7 × 542**

   A  3,584        D  3,894
   B  3,694        E  NH
   C  3,794

6. **Last year 272 people ran in the marathon. This year twice as many people ran. How many people ran in the marathon this year?**

   F  244 people
   G  444 people
   H  454 people
   J  544 people
   K  NH

7. **9 × 826**

   A  7,284        D  7,534
   B  7,384        E  NH
   C  7,424

8. **Alexa has 3 boxes of labels. There are 220 labels in each box. How many labels does she have in all?**

   F  223 labels
   G  620 labels
   H  660 labels
   J  663 labels
   K  NH

# Estimating Products

**Choose the correct letter for each answer.**

**1. Estimate 45 × 8.**

   **A** 200      **C** 320

   **B** 240      **D** 400

**2. A package of straws contains 110 straws. About how many straws are in 5 packages?**

   **F** About 50 straws

   **G** About 100 straws

   **H** About 500 straws

   **J** About 1,000 straws

**3. At the gift shop, each beach towel costs $18. If you bought 4 beach towels, about how much did you spend?**

   **A** About $40   **C** About $80

   **B** About $60   **D** About $100

**4. Estimate 6 × 329.**

   **F** 180      **H** 2,000

   **G** 1,800    **J** 2,400

**5. Estimate 9 × 81.**

   **A** 720      **C** 7,200

   **B** 810      **D** 8,100

**6. Each tour in a museum lasts 55 minutes. If you go on 3 tours, about how long will it take?**

   **F** About 100 minutes

   **G** About 3 hours

   **H** About 4 hours

   **J** About 5 hours

**7. Estimate 7 × 482.**

   **A** 350      **C** 3,000

   **B** 2,800    **D** 3,500

**8. Mary bought 5 packages of paper. Each package has 450 sheets. About how many sheets of paper did Mary buy?**

   **F** About 2,000 sheets

   **G** About 2,500 sheets

   **H** About 20,000 sheets

   **J** About 25,000 sheets

**9. Estimate 99 × 2.**

   **A** 90      **C** 180

   **B** 160      **D** 200

# Mental Math: Multiplication Patterns

**Choose the correct letter for each answer.**

1.   600
     × 4

   **A**  24              **D**  24,000
   **B**  240            **E**  NH
   **C**  2,400

2.  **There are 30 feet of tape on one roll. How many feet of tape are on 7 rolls?**

   **F**  180 feet      **J**  240 feet
   **G**  200 feet      **K**  NH
   **H**  210 feet

3.  **Elise bought 4 boxes of paper cups. Each box had 90 cups. How many paper cups did Elise buy?**

   **A**  320 paper cups
   **B**  340 paper cups
   **C**  360 paper cups
   **D**  380 paper cups
   **E**  NH

4.  **8 × 500 =**

   **F**  400            **J**  400,000
   **G**  4,000          **K**  NH
   **H**  40,000

5.  **Scott cut a rope into 5 pieces. Each piece is 60 inches long. How many inches long was the rope before Scott cut it into pieces?**

   **A**  250 inches    **D**  400 inches
   **B**  300 inches    **E**  NH
   **C**  350 inches

6.   70
     × 9

   **F**  63            **J**  720
   **G**  540           **K**  NH
   **H**  639

7.  **Troy bought 3 bottles of bubble bath. Each bottle held 300 milliliters. How many milliliters of bubble bath did he buy in all?**

   **A**  1,500 milliliters
   **B**  1,200 milliliters
   **C**  1,000 milliliters
   **D**  900 milliliters
   **E**  NH

8.  **2 × 600 =**

   **F**  1,200         **J**  12
   **G**  800           **K**  NH
   **H**  120

# Classifying Triangles Using Angles

**Choose the correct letter for each answer.**

**1. Which figure is an acute triangle?**

**A**
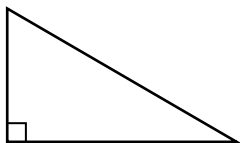
**B**
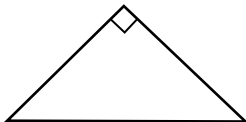
**C**
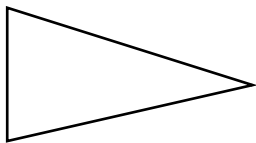
**D**
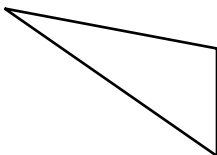
**2. Which of the following best completes this sentence: An obtuse triangle has**

**F** One obtuse angle.

**G** Two obtuse angles.

**H** Three obtuse angles.

**J** No obtuse angles.

**3. Which is the name of this figure?**
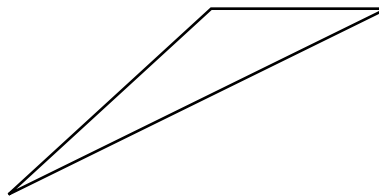
**A** Acute angle
**B** Acute triangle
**C** Obtuse triangle
**D** Right triangle

**4. Which is the name of this figure?**
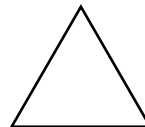
**F** Acute angle
**G** Acute triangle
**H** Obtuse triangle
**J** Right triangle

**5. Which is the name of this figure?**
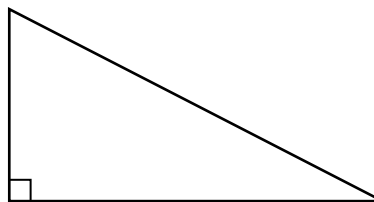
**A** Acute angle
**B** Acute triangle
**C** Obtuse triangle
**D** Right triangle

# Dividing by 10

**Choose the correct letter for each answer.**

1. **Amy sewed 30 baby bibs for the craft fair. She sewed 10 bibs each day. How many days did it take Amy to sew the bibs?**

   **A** 6 days      **D** 3 days

   **B** 5 days      **E** NH

   **C** 4 days

2. **100 ÷ 10 =**

   **F** 0           **J** 100

   **G** 1           **K** NH

   **H** 10

3. **A radio contest has 70 prizes to give away. Every day, 10 prizes are given away. How many days will the contest last?**

   **A** 5 days      **D** 80 days

   **B** 7 days      **E** NH

   **C** 8 days

4. **Mr. Morris bought 40 pieces of chalk. There are 10 pieces in a box. How many boxes did he buy?**

   **F** 4 boxes     **J** 400 boxes

   **G** 10 boxes    **K** NH

   **H** 50 boxes

5. **20 ÷ 10 =**

   **A** 2           **D** 200

   **B** 20          **E** NH

   **C** 30

6. **There are 50 students performing in the school show. They will perform in 10 groups of equal size. How many groups of students will perform at the show?**

   **F** 8 groups    **J** 5 groups

   **G** 7 groups    **K** NH

   **H** 6 groups

7. **80 ÷ 10 =**

   **A** 8           **D** 800

   **B** 10          **E** NH

   **C** 80

8. **There are 90 beads in a bag. It takes 10 beads to make a bracelet. How many bracelets can be made with 1 bag of beads?**

   **F** 9 bracelets    **J** 100 bracelets

   **G** 10 bracelets   **K** NH

   **H** 90 bracelets

# Dividing by 8

**Choose the correct letter for each answer.**

1. **In a theater, there are 8 seats in each row. How many rows are needed to seat 40 children?**

   **A** 4 rows     **D** 8 rows

   **B** 5 rows     **E** NH

   **C** 6 rows

2. **There are 24 different puppets in a show. Each puppeteer uses 8 different puppets. How many puppeteers are needed for the show?**

   **F** 4 puppeteers

   **G** 6 puppeteers

   **H** 7 puppeteers

   **J** 8 puppeteers

   **K** NH

3. **8)72**

   **A** 6     **D** 9

   **B** 7     **E** NH

   **C** 8

4. **Kevin has 16 photos. He plans to put an equal number of photos into each of 8 frames. How many photos will he put in each frame?**

   **F** 2 photos     **J** 8 photos

   **G** 4 photos     **K** NH

   **H** 6 photos

5. **Beatrix has 32 paintings to display at an art gallery. She puts an equal number of paintings on each of 8 walls. How many paintings are on each wall?**

   **A** 2 paintings

   **B** 4 paintings

   **C** 6 paintings

   **D** 8 paintings

   **E** NH

6. **64 ÷ 8 =**

   **F** 6     **J** 9

   **G** 7     **K** NH

   **H** 8

7. **8)8**

   **A** 1     **D** 64

   **B** 8     **E** NH

   **C** 16

8. **Mr. Feeney bought 48 flowers in 8 different colors. He bought the same number of each color flower. Which number sentence tells how many red flowers he bought?**

   **F** $48 + 8 = 56$

   **G** $48 - 8 = 40$

   **H** $48 \div 8 = 6$

   **J** $8 \times 8 = 64$

# Dividing by 4

**Choose the correct letter for each answer.**

1. **Which of these belongs to the same fact family as 28 ÷ 4?**

   **A** $4 \times 6 = 24$  **C** $3 \times 9 = 27$

   **B** $3 \times 8 = 24$  **D** $4 \times 7 = 28$

2. $4\overline{)36}$

   **F** 4      **J** 32

   **G** 8      **K** NH

   **H** 10

3. **Sylvia taped 16 minutes of film clips. Each clip was 4 minutes long. How many film clips did Sylvia tape?**

   **A** 4 film clips

   **B** 7 film clips

   **C** 8 film clips

   **D** 9 film clips

   **E** NH

4. **8 ÷ 4 =**

   **F** 2      **J** 32

   **G** 4      **K** NH

   **H** 12

5. **Four clowns juggle 20 scarves in all. Each clown juggles the same number of scarves. How many scarves does each clown juggle?**

   **A** 20 scarves    **D** 5 scarves

   **B** 12 scarves    **E** NH

   **C** 8 scarves

6. **There are a dozen pencils. They are put into packages of 4. How many packages are needed?**

   **F** 2 packages    **J** 8 packages

   **G** 3 packages    **K** NH

   **H** 4 packages

7. **Missy spent $24 on books. Each book cost $4. How many books did Missy buy?**

   **A** 6 books     **D** 20 books

   **B** 8 books     **E** NH

   **C** 12 books

8. $4\overline{)32}$

   **F** 6      **J** 9

   **G** 7      **K** NH

   **H** 3

# Dividing by 3

**Choose the correct letter for each answer.**

**1.** $21 \div 3 =$

**A** 5  **D** 8

**B** 6  **E** NH

**C** 7

**2.** There were 15 pioneers. They rode west in 3 wagons. Each wagon had the same number of people. How many pioneers were in each wagon?

**F** 4 pioneers  **J** 12 pioneers

**G** 5 pioneers  **K** NH

**H** 6 pioneers

**3.** What number belongs in the box to make this number sentence true?

$12 \div 3 = \square$

**A** 3  **C** 9

**B** 4  **D** 15

**4.** Tammy has 24 beads for necklaces. Each necklace uses 3 beads. How many necklaces can she make?

**F** 21 necklaces  **J** 6 necklaces

**G** 12 necklaces  **K** NH

**H** 8 necklaces

**5.** Jean has 18 stickers. She put 3 stickers on each of her notebooks. Which number sentence tells how many notebooks Jean has?

**A** $18 + 3 = 21$

**B** $18 \div 3 = 6$

**C** $18 - 3 = 15$

**D** $3 + 3 = 6$

**6.** An orchestra has 27 musicians. They are seated in 3 equal rows. How many musicians are in each row?

**F** 6 musicians  **J** 9 musicians

**G** 7 musicians  **K** NH

**H** 8 musicians

**7.** $9 \div 3 =$

**A** 2  **D** 27

**B** 6  **E** NH

**C** 12

**8.** Find the number that makes both number sentences true.

| $3 \times \square = 15$ | $15 \div 3 = \square$ |
|---|---|

**F** 4  **H** 6

**G** 5  **J** 7

# Dividing by 2

**Choose the correct letter for each answer.**

1. **If 8 × 2 = 16, then what is 16 ÷ 2?**

   **A** 14     **C** 10

   **B** 2     **D** 8

2. **The Sports Area sells tennis balls for $2 per can. How many cans of tennis balls will cost $18?**

   **F** 20 cans

   **G** 16 cans

   **H** 9 cans

   **J** 5 cans

   **K** NH

3. **14 ÷ 2 =**

   **A** 7     **D** 28

   **B** 8     **E** NH

   **C** 12

4. **There are 12 eggs. They are put into 2 baskets. How many eggs are in each basket?**

   **F** 5 eggs     **J** 24 eggs

   **G** 6 eggs     **K** NH

   **H** 14 eggs

5. **6 ÷ 2 =**

   **A** 3     **D** 12

   **B** 4     **E** NH

   **C** 8

6. **Carolyn sold 8 garlic bagels. Each customer bought 2 garlic bagels. How many customers bought garlic bagels?**

   **F** 4 customers

   **G** 6 customers

   **H** 10 customers

   **J** 16 customers

   **K** NH

7. **The 10 dancers lined up in rows. There were 2 dancers in each row. How many rows of dancers were there?**

   **A** 4 rows     **D** 20 rows

   **B** 5 rows     **E** NH

   **C** 12 rows

8. **4 ÷ 2 =**

   **F** 2     **J** 8

   **G** 4     **K** NH

   **H** 6

# Multiplying by 8

**Choose the correct letter for each answer.**

1. **Each pair of roller skates has 8 wheels. How many wheels are there on 9 pairs of roller skates?**

   **9 ×**

   | | | | |
   |---|---|---|---|
   | **A** | 36 wheels | **D** | 81 wheels |
   | **B** | 54 wheels | **E** | NH |
   | **C** | 63 wheels | | |

2. **$7 \times 8 =$**

   | | | | |
   |---|---|---|---|
   | **F** | 15 | **J** | 78 |
   | **G** | 48 | **K** | NH |
   | **H** | 56 | | |

3. **An octopus has 8 arms. How many arms do 4 octopuses have?**

   | | | | |
   |---|---|---|---|
   | **A** | 24 arms | **D** | 48 arms |
   | **B** | 32 arms | **E** | NH |
   | **C** | 36 arms | | |

4. **$0 \times 8 =$**

   | | | | |
   |---|---|---|---|
   | **F** | 0 | **J** | 80 |
   | **G** | 1 | **K** | NH |
   | **H** | 8 | | |

5. **Which has the same product as $6 \times 8$?**

   | | | | |
   |---|---|---|---|
   | **A** | $6 + 8$ | **C** | $6 \div 8$ |
   | **B** | $8 \times 6$ | **D** | $8 \div 6$ |

6. **One table seats 8 people. How many people can sit at 3 tables?**

   | | | | |
   |---|---|---|---|
   | **F** | 24 people | **J** | 83 people |
   | **G** | 28 people | **K** | NH |
   | **H** | 36 people | | |

7. $$\begin{array}{r} 2 \\ \times\, 8 \\ \hline \end{array}$$

   | | | | |
   |---|---|---|---|
   | **A** | 4 | **D** | 19 |
   | **B** | 10 | **E** | NH |
   | **C** | 16 | | |

8. **Craig filled 8 punch bowls with fruit punch. Each bowl holds 8 quarts. How many quarts of fruit punch does Craig have?**

   | | | | |
   |---|---|---|---|
   | **F** | 56 quarts | **J** | 81 quarts |
   | **G** | 64 quarts | **K** | NH |
   | **H** | 72 quarts | | |

# Multiplying by 6

**Choose the correct letter for each answer.**

---

1. **Bree bought 7 boxes of granola bars for her class party. There were 6 bars in each box. Which number sentence tells how many granola bars Bree bought in all?**

   **A**  $7 + 6 = 13$

   **B**  $6 \times 6 = 36$

   **C**  $7 \times 6 = 42$

   **D**  $56 \div 7 = 6$

---

2.     **6**

   $\underline{\times\ 4}$

   **F**  10       **J**  28

   **G**  20      **K**  NH

   **H**  24

---

3. **$6 \times 6 =$**

   **A**  12      **D**  42

   **B**  30      **E**  NH

   **C**  36

---

4. **There are 6 markers in a package. How many markers are in 2 packages?**

   **F**  6 markers    **J**  16 markers

   **G**  8 markers    **K**  NH

   **H**  10 markers

---

5. **It costs $6 per night to camp in Guadalupe Mountains National Park. How much will it cost to camp for 5 nights?**

   **A**  $30      **D**  $45

   **B**  $35      **E**  NH

   **C**  $40

---

6. **Which means the same as 6 + 6 + 6?**

   **F**  $1 \times 6$      **H**  $3 \times 6$

   **G**  $2 \times 6$      **J**  $4 \times 6$

---

7. **Tyrone has a rock collection. His rocks are arranged in 3 rows. There are 6 rocks in each row. How many rocks does Tyrone have?**

   **A**  9 rocks     **D**  27 rocks

   **B**  12 rocks    **E**  NH

   **C**  18 rocks

---

8. **$6 \times 8 =$**

   **F**  40      **J**  56

   **G**  42      **K**  NH

   **H**  48

# Making Arrays

**Choose the correct letter for each answer.**

1. **Which multiplication sentence describes the array?**
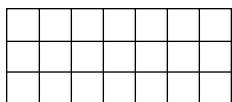
   

   A  $3 \times 7 = 21$
   B  $4 \times 5 = 20$
   C  $5 \times 4 = 20$
   D  $6 \times 3 = 18$

2. **Which multiplication sentence produces a square number?**

   F  $3 \times 4 = 12$
   G  $4 \times 4 = 16$
   H  $6 \times 1 = 6$
   J  $7 \times 6 = 42$

3. **Which multiplication sentence describes the array?**

   

   A  $1 \times 3 = 3$
   B  $1 \times 4 = 4$
   C  $4 \times 1 = 4$
   D  $5 \times 1 = 5$

4. **Which array represents the multiplication sentence?**

   $2 \times 5 = 10$
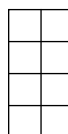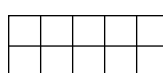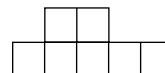
   

5. **Which multiplication sentence describes the array?**
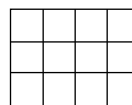
   

   A  $3 \times 4 = 12$
   B  $6 \times 2 = 12$
   C  $12 \times 1 = 12$
   D  $2 \times 6 = 12$

6. **Which array represents a square number?**
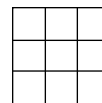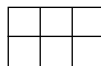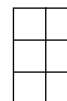
# Multiplying by 1 or 0

**Choose the correct letter for each answer.**

1. **A set of tools has 7 screwdrivers. Moesha bought 1 tool set. How many screwdrivers did she buy?**

   **A** 1 screwdriver

   **B** 7 screwdrivers

   **C** 8 screwdrivers

   **D** 70 screwdrivers

   **E** NH

2. **6 × 0 =**

   **F** 6           **J** 0

   **G** 5           **K** NH

   **H** 1

3. **Yoko saw 5 birds' nests. Each nest had 0 eggs. How many eggs did Yoko see in the nests?**

   **A** 0 eggs      **D** 50 eggs

   **B** 5 eggs      **E** NH

   **C** 6 eggs

4. **8**
   **× 1**

   **F** 0           **J** 9

   **G** 1           **K** NH

   **H** 8

5. **Megan bought 3 notebooks. Each notebook cost $1. How much money did Megan spend on notebooks?**

   **A** $3          **D** $15

   **B** $5          **E** NH

   **C** $8

6. **9 × 0 =**

   **F** 0           **J** 90

   **G** 1           **K** NH

   **H** 9

7. **A package of bubble gum comes with 4 sports cards. Jason bought 1 package of bubble gum. How many sports cards did he get?**

   **A** 1 sports card

   **B** 2 sports cards

   **C** 3 sports cards

   **D** 4 sports cards

   **E** NH

8. **1 × 0 =**

   **F** 0           **J** 10

   **G** 1           **K** NH

   **H** 9

# Multiplying by 4

**Choose the correct letter for each answer.**

**1.**
$$4$$
$$\times\ 9$$

A  36        D  20

B  32        E  NH

C  24

**2.** **Groups of 4 students work together in math class. There are 5 groups. How many students are there in all?**

F  9 students        J  45 students

G  16 students       K  NH

H  20 students

**3. 7 × 4 =**

A  16        D  28

B  18        E  NH

C  20

**4.** **There are 4 people in the Smith family. Each person reads 4 books per month. How many books does the family read in one month?**

F  8 books        J  30 books

G  16 books       K  NH

H  24 books

**5.** **Each table in the school library has space for 4 students. There are 8 tables in all. If all the tables are full, how many students are sitting at the tables?**

A  12 students   D  32 students

B  28 students   E  NH

C  30 students

**6.** **Mary made 3 bracelets. She used 4 gold beads in each bracelet. Which number sentence tells how many gold beads Mary used in all?**

F  $2 \times 4 = 8$

G  $3 \times 3 = 9$

H  $3 \times 4 = 12$

J  $4 \times 4 = 16$

**7.**
$$4$$
$$\times\ 6$$

A  10        D  30

B  18        E  NH

C  26

Name _____

# Practicing Division

**1.** 12 ÷ 3 = _____ R _____

| 4R2 | 3R4 | 4R0 | NH |
|:---:|:---:|:---:|:---:|
| ○ | ○ | ○ | ○ |

**2.** 7 ÷ 3 = _____ R _____

| 1R4 | 2R1 | 3R1 | NH |
|:---:|:---:|:---:|:---:|
| ○ | ○ | ○ | ○ |

**3.** 13 ÷ 6 = _____ R _____
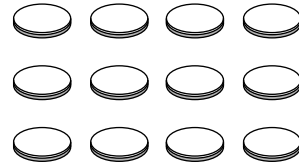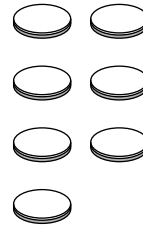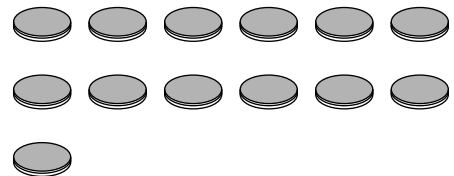
| 2R1 | 1R2 | 3R2 | NH |
|:---:|:---:|:---:|:---:|
| ○ | ○ | ○ | ○ |

**Oral Directions** *Fill in the ○ for the correct answer. If the correct answer is not given, mark NH for "Not Here."*

#1–3. Divide.

# Transformations

## Example 1

For each example below, trace Figure I. Move the tracing paper to fit exactly on Figure II. Try not to lift the tracing paper from the page unless you have to. Tell how you would move Figure I to change its position to Figure II.
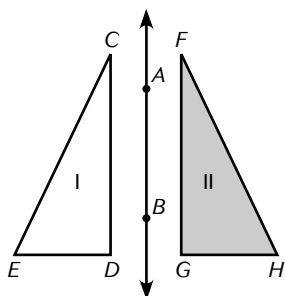
A change in position resulting from a *flip* is called a **reflection**.
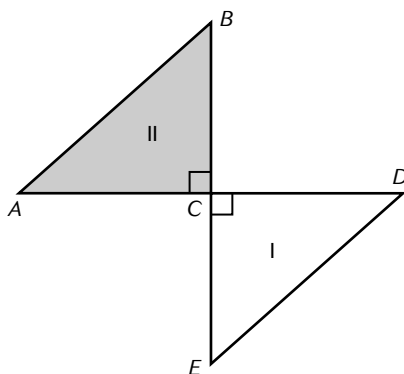
A change in position resulting from a *turn* is called a **rotation**.
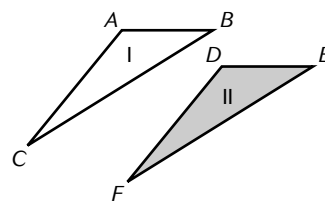
A change in position resulting from a *slide* is called a **translation**.

Trace Figure I. Move the tracing paper to fit exactly on Figure II. Use *translation*, *rotation*, and *reflection* to describe the motions used.

**1.**

**2.**

**3.**

**4.**

**5.**
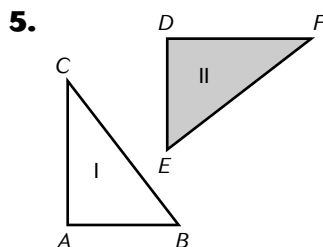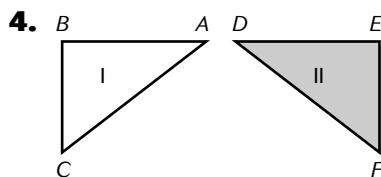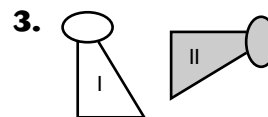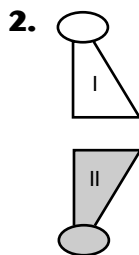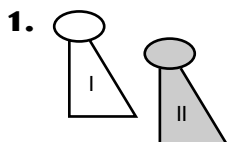
## Transformations (continued)

Trace Figure I. Move the tracing paper to fit exactly on Figure II.
Use *translation*, *rotation*, and *reflection* to describe the motions used.

**6.**
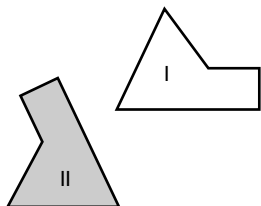
**7.**
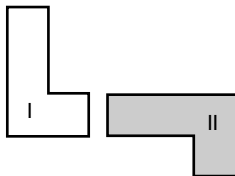
**8.**

_____          _____          _____

_____          _____          _____
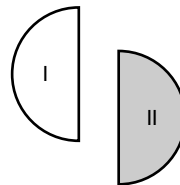
How many lines of symmetry does each figure have?

**9.**
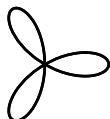
**10.**

**11.**

_____          _____          _____

**12.** How many lines of symmetry does a rhombus have?

_____

**13.** How many lines of symmetry does a right triangle have?

_____

**Test Prep** Choose the letter of the correct answer.

**14.** How many lines of symmetry are in the figure at the right?

    **A** 0        **B** 1        **C** 4        **D** 2

**15.** Which of the following pairs of figures shows a rotation?

    **F**        **G**        **H**        **J**
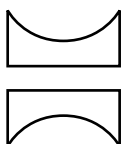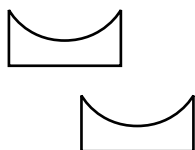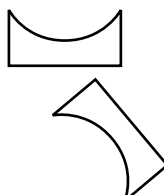
# Adding Whole Numbers and Decimals

**Example**

Add: 2,745.2 + 319 + 24.37.

When adding whole numbers, arrange them so that place values are properly aligned.

$$\begin{array}{r} 2{,}745.20 \\ 319.00 \\ +\quad 24.37 \\ \hline 3{,}088.57 \end{array}$$

Zeros are written as placeholders.

When adding decimals, align the decimal points.

Estimate to check your answer, by rounding to the largest digit.
3,000 + 300 + 20 = 3,320.

Since 3,088.57 is close to 3,320, the answer is reasonable.

Estimate first. Then find the exact sum.

**1.**  $674.28
   + 215.84

**2.**  8,940
   + 7,561

**3.**  12.094
      6.123
   +  4.570

**4.**  2.014
      0.025
   + 1.307

**5.** 1,208 + 35 + 6.5

**6.** 2.601 + 10.012 + 0.56 + 4

⎯⎯⎯⎯⎯⎯

⎯⎯⎯⎯⎯⎯

Use mental math, paper and pencil, or a calculator to find the sum.

**7.**  2.375
      9.300
   + 6.825

**8.**  315.10
      423.59
   + 132.01

**9.**  4.8071
      2.0035
   + 3.2204

**10.**  24,541.21
      9,056.39
   + 6,513.50

## Adding Whole Numbers and Decimals (continued)

Estimate first. Then find the exact sum.

**11.**  $478.05
    + 219.36

**12.**  1,954.2
     + 497.5

**13.** 163.21
      25.34
     + 6.19

**14.** $118.09
      42.65
     + 3.94

**15.** 12 + 8.9 + 6.05

**16.** 41.9 + 0.21 + 5.701 + 3.8

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

Use mental math, paper and pencil, or a calculator to find the sum.

**17.**   878.15
     12.85
    +   6.01

**18.**   3.095
     2.105
    + 1.120

**19.**   7.0042
     3.1095
    + 2.8112

**20.**   $15,971.80
       219.20
    +      10.50

**21.** Jonna went to a book store and bought 3 books.One
cost $4.59, another cost $6.98, and the third cost $5.10.
How much did she spend?                              ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

**22.** Mary bought 5 pounds of potatoes, 1.75 pounds of
onions, and 2.05 pounds of carrots. How many pounds
of vegetables did she buy?                           ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

**Test Prep** Choose the correct letter for each answer.

**23.** Find the exact sum: 16 + 2.51 + 8.025.

   **A** 8.292     **B** 98.76     **C** 26.535     **D** 8.436     **E** NH

**24.** Julia bought presents for three friends, costing $12.98, $15.00 and
$14.75. How much did she spend?

   **F** $42.73     **G** $27.88     **H** $52.73     **J** $37.88     **K** NH

# Congruent Figures and Transformations

## Example

Choose the figure that is congruent to the first figure in the row. Then tell what transformation is illustrated between the two figures.

**a**          **b**          **c**
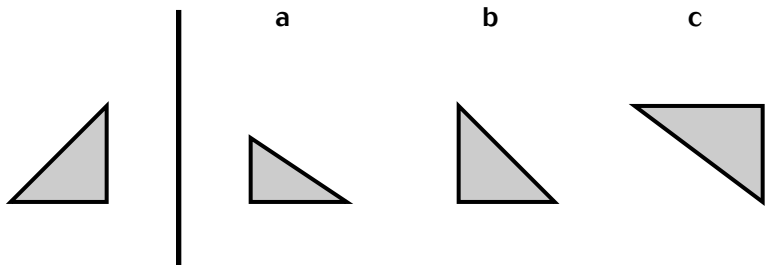
The first figure is congruent to choice **b**. A flip is the transformation illustrated between the two congruent figures.

Choose the figure that is congruent to the first figure in each row. Then tell what transformation is illustrated between the two figures.

**1.**          **a**          **b**          **c**

_____

**2.**          **a**          **b**          **c**

_____

**3.**          **a**          **b**          **c**

_____

Name_____

## Congruent Figures and Transformations (continued)

Choose the figure that is congruent to the first figure in each row.
Then tell what transformation is illustrated between the two figures.

**4.**          a          b          c

_____

**5.**          a          b          c

_____

**6.**          a          b          c

_____
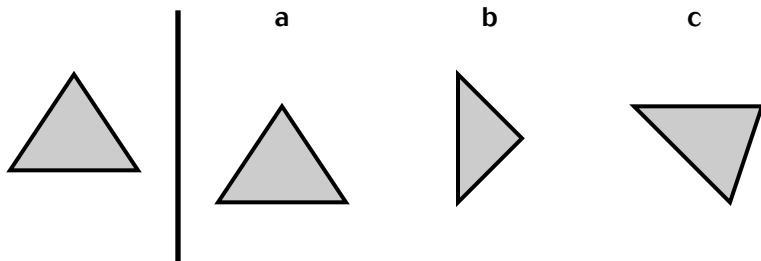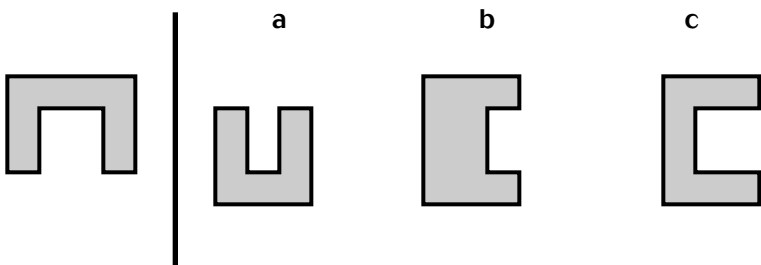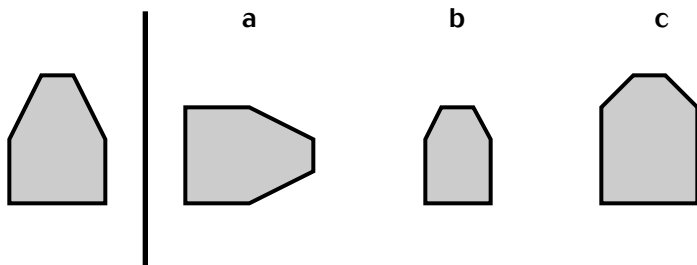
**7. Math Reasoning** Turning a figure to the right two times results
in which single transformation?

_____

**Test Prep** Choose the correct letter for the answer.

**8.** Which two figures are congruent?

    **A**  Figure 1 and Figure 2

    **B**  Figure 1 and Figure 3

    **C**  Figure 1 and Figure 4

    **D**  Figure 2 and Figure 3

Figure 1     Figure 2     Figure 3     Figure 4

# Triangles

## Example

Classify the triangle by the measures of its angles and by the lengths of its sides.

The angles in this triangle look as though they are all less than 90°. Therefore it is an acute triangle. Two of the sides are the same length so it is isosceles.

Classify each triangle by the measures of its angles and by the lengths of its sides.

**1.**

_____

_____

**2.**

_____

_____

**3.**

_____

_____

**4.**

_____

_____

**5.**

_____

_____

**6.**

_____

_____

## Triangles (continued)

Classify each triangle by the measures of its angles and by the lengths of its sides.

**7.**

1.1 m    1.1 m

1.1 m

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

**8.**

6    8.5

6

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

**9.**

4 cm    7 cm

9 cm

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

**10.**

6 in.    6 in.

2 in.

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

**11.**

$3\frac{3}{4}$ ft

2 ft    $2\frac{1}{2}$ ft

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

**12.**

4 m

4 m

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

**13.** A fenced dog pen creates an isosceles triangle. Two equal sides are formed by the fence and the third side is formed by a brick wall. One fenced side measures 15 feet. How much fence is used in the dog pen? ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

**14. Algebra** Two angles of a triangle measure 65° and 100°. Write and solve an equation to find the measure of the third angle.

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

**15. Math Reasoning** What are the measures of all the angles in an isosceles right triangle? ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

**Test Prep** Choose the correct letter for the answer.

**16.** Which of these triangles is NOT possible?

**A** Right and obtuse          **C** Equilateral and acute

**B** Right and scalene          **D** Isosceles and acute

# Triangles

## Example

Classify the triangle by the measures of its angles and by the lengths of its sides.

The angles in this triangle look as though they are all less than 90°. Therefore it is an acute triangle. Two of the sides are the same length so it is isosceles.

Classify each triangle by the measures of its angles and by the lengths of its sides.

**1.**

_____

_____

**2.**

_____

_____

**3.**

_____

_____

**4.**

_____

_____

**5.**

_____

_____

**6.**

_____

_____

## **Triangles** (continued)

Classify each triangle by the measures of its angles and by the lengths of its sides.

**7.**

1.1 m    1.1 m

1.1 m

_____

_____

**8.**

6    8.5

6

_____

_____

**9.**

4 cm    7 cm

9 cm

_____

_____

**10.**

6 in.    6 in.

2 in.

_____

_____

**11.**

$3\frac{3}{4}$ ft

2 ft

$2\frac{1}{2}$ ft

_____

_____

**12.**

4 m

4 m

_____

_____

**13.** A fenced dog pen creates an isosceles triangle. Two equal sides are formed by the fence and the third side is formed by a brick wall. One fenced side measures 15 feet. How much fence is used in the dog pen?  _____

**14. Algebra** Two angles of a triangle measure 65° and 100°. Write and solve an equation to find the measure of the third angle.

_____

**15. Math Reasoning** What are the measures of all the angles in an isosceles right triangle?  _____

**Test Prep** Choose the correct letter for the answer.

**16.** Which of these triangles is NOT possible?

**A** Right and obtuse

**C** Equilateral and acute

**B** Right and scalene

**D** Isosceles and acute

# Triangles

## Example

Classify the triangle by the measures of its angles and by the lengths of its sides.

The angles in this triangle look as though they are all less than 90°. Therefore it is an acute triangle. Two of the sides are the same length so it is isosceles.

Classify each triangle by the measures of its angles and by the lengths of its sides.

**1.**

_____

_____

**2.**

_____

_____

**3.**

_____

_____

**4.**

_____

_____

**5.**

_____

_____

**6.**

_____

_____

Name_____

## Triangles (continued)

Classify each triangle by the measures of its angles and by the lengths
of its sides.

**7.**

1.1 m    1.1 m

1.1 m

_____

_____

**8.**

6    8.5

6

_____

_____

**9.**

4 cm    7 cm

9 cm

_____

_____

**10.**

6 in.    6 in.

2 in.

_____

_____

**11.**

$3\frac{3}{4}$ ft

2 ft

$2\frac{1}{2}$ ft

_____

_____

**12.**

4 m

4 m

_____

_____

**13.** A fenced dog pen creates an isosceles triangle. Two equal
sides are formed by the fence and the third side is formed
by a brick wall. One fenced side measures 15 feet. How
much fence is used in the dog pen?                         _____

**14. Algebra** Two angles of a triangle measure 65° and 100°. Write
and solve an equation to find the measure of the third angle.

_____

**15. Math Reasoning** What are the measures of
all the angles in an isosceles right triangle?            _____

**Test Prep** Choose the correct letter for the answer.

**16.** Which of these triangles is NOT possible?

**A** Right and obtuse          **C** Equilateral and acute

**B** Right and scalene         **D** Isosceles and acute

# Quadrilaterals and Other Polygons

## Example

Name the polygon. Tell if it is regular. Classify each quadrilateral in as many ways as possible.

The polygon has four sides so it is a quadrilateral. Because there are 2 pairs of parallel sides and all angles are right, it is a rectangle.
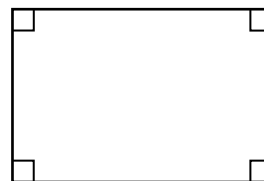
All sides are not equal so it is not regular.

Name each polygon. Tell if it is regular. Classify each quadrilateral in as many ways as possible.

**1.**

**2.**

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯    ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯    ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯    ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

**3.**

**4.**

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯    ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯    ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯    ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯
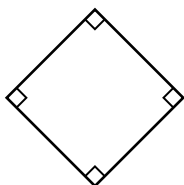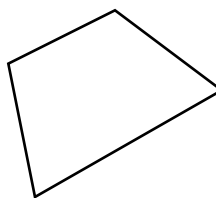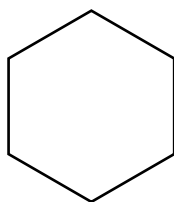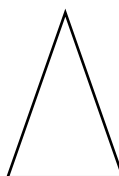
## Quadrilaterals and Other Polygons (continued)

Name each polygon. Tell if it is regular. Classify each quadrilateral in as many ways as possible.

**5.**
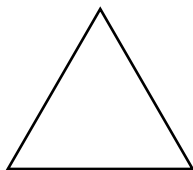
**6.**

_____     _____

_____     _____

_____     _____
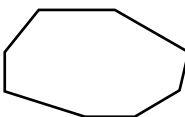
**7.** a stop sign                    **8.** a doorway

_____     _____

_____     _____

_____     _____

9. **Algebra** Three angles of a quadrilateral measure 35°, 110°, and 125°. Write and solve an equation to find the measure of the fourth angle.

_____

10. **Math Reasoning** A diagonal is drawn so that it divides a regular octagon into two parts. One part is a triangle. What is the shape of the other part?

_____

**Test Prep** Choose the correct letter for each answer.

11. What type of polygon is shown?

   **A** Decagon

   **B** Octagon

   **C** Pentagon

   **D** Regular

12. Which of these is NOT a parallelogram?

   **F** Rectangle

   **G** Rhombus

   **H** Square

   **J** Trapezoid

# Measuring and Classifying Angles

### Example 1

Classify the angle as acute, right, or obtuse.
Then use a protractor to check the measure.

The angle looks less than 90°, so it is acute.
A protractor shows the measure to be 60°.

### Example 2

Classify the angle as acute, right, or obtuse.
Then use a protractor to check the measure.

The angle looks more than 90°, so it is obtuse.
A protractor shows the measure to be 110°.
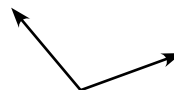
Classify each angle as acute, right, obtuse, or straight. Then use a
protractor to check each measure.

**1.**

_____

_____

**2.**

_____

_____

**3.**

_____

_____

**4.**

_____

_____

**5.**

_____

_____

**6.**

_____

_____
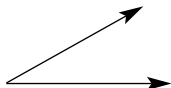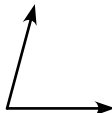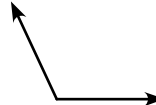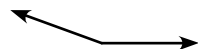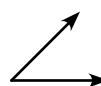
## Measuring and Classifying Angles (continued)

Classify each angle as acute, right, obtuse, or straight. Then use a protractor to check each measure.

**7.** 

**8.** 

**9.** 

_____     _____     _____

_____     _____     _____
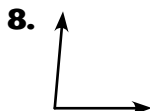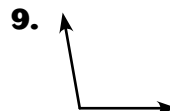
Use a protractor to draw an angle with each measure.

**10.** 120°          **11.** 35°          **12.** 70°

**13. Algebra** A figure has four angles. The sum of its angles is 360°. Three of its angles measure 90°, 120°, and 70°. What kind of angle is the fourth angle?

_____

**Test Prep** Choose the correct letter for each answer.

**14.** Which is the measure of an obtuse angle?

   **A** 180°          **C** 90°

   **B** 100°          **D** 80°

**15.** Benjamin drew the angle at the right. How would you classify the angle?



157°

   **F** Straight

   **G** Obtuse

   **H** Right

   **J** Acute

# Geometric Ideas

## Example 1

Draw and label an example of a plane *ABC*.



## Example 2

Draw and label an example of $\overrightarrow{AB}$ intersects $\overleftrightarrow{LM}$.



Draw and label an example of each.

**1.** ray *GH*

**2.** line segment *RS*

**3.** plane *IJK*

**4.** $\overleftrightarrow{TV}$ is parallel to $\overleftrightarrow{WX}$

**5.** $\overline{EF}$ is perpendicular to $\overline{JK}$

**6.** $\overrightarrow{YZ}$ intersects $\overline{AB}$

**7.** $\overline{CD}$ intersects $\overrightarrow{HJ}$

**8.** $\overrightarrow{LM}$ is perpendicular to $\overrightarrow{NP}$

**9.** point *C*

## Geometric Ideas (continued)

Draw and label an example of each.

**10.** two perpendicular lines     **11.** two parallel lines     **12.** plane *JKL*

**13.** ray *HJ*                **14.** line segment *KL*     **15.** line *RS*

Use the drawing at the right for Exercises 16 and 17.

**16.** Name 3 line segments     **17.** Name 2 lines

_____     _____

_____     _____

**18. Math Reasoning** What geometric idea is suggested by a floor in
a room? What geometric idea is suggested by the edge of a table?

_____

**Test Prep** Choose the correct letter for the answer.

**19.** Which of these describes point *F*?

   **A** It is the endpoint of $\overline{AD}$.

   **B** It is the endpoint of $\overline{FG}$.

   **C** It is on $\overline{AC}$.

   **D** It is on $\overline{AG}$.

Name

# Geometric Ideas

**Example 1**

Draw and label an example of a plane *ABC*.



**Example 2**

Draw and label an example of $\overrightarrow{AB}$ intersects $\overleftrightarrow{LM}$.



Draw and label an example of each.

**1.** ray *GH*

**2.** line segment *RS*

**3.** plane *IJK*

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**6.** $\overrightarrow{YZ}$ intersects $\overline{AB}$

**7.** $\overline{CD}$ intersects $\overrightarrow{HJ}$

**8.** $\overrightarrow{LM}$ is perpendicular to $\overrightarrow{NP}$

**9.** point *C*

## Geometric Ideas (continued)

Draw and label an example of each.

**10.** two perpendicular lines     **11.** two parallel lines     **12.** plane *JKL*

**13.** ray *HJ*                     **14.** line segment *KL*     **15.** line *RS*

Use the drawing at the right for Exercises 16 and 17.

**16.** Name 3 line segments   **17.** Name 2 lines

_____      _____

_____      _____

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_____

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**19.** Which of these describes point *F*?

   **A**  It is the endpoint of $\overline{AD}$.

   **B**  It is the endpoint of $\overline{FG}$.

   **C**  It is on $\overline{AC}$.

   **D**  It is on $\overline{AG}$.

# Estimating Sums and Differences of Mixed Numbers

**Example**

Estimate $4\frac{1}{3} - 1\frac{2}{3}$.

You can estimate sums and differences of mixed numbers by rounding each number to the nearest whole number. If the fraction is greater than or equal to $\frac{1}{2}$, round up to the next whole number. Otherwise, round down.

$$4\frac{1}{3} \longrightarrow \quad 4 \qquad \frac{1}{3} < \frac{1}{2} \text{ so round to } 4$$

$$-1\frac{2}{3} \longrightarrow \underline{-2} \qquad \frac{2}{3} > \frac{1}{2} \text{ so round to } 2$$

The answer is about 2.

Estimate each sum or difference.

**1.** $\quad 2\frac{2}{3}$
$\quad -1\frac{1}{3}$
_____

**2.** $\quad \frac{4}{5}$
$\quad +\frac{3}{5}$
_____

**3.** $\quad 5\frac{1}{4}$
$\quad -\frac{2}{4}$
_____

**4.** $\quad 6\frac{4}{6}$
$\quad +1\frac{5}{6}$
_____

**5.** $\quad 6\frac{7}{8}$
$\quad -5\frac{3}{8}$
_____

**6.** $\quad 6$
$\quad -3\frac{3}{9}$
_____

**7.** $\quad 4\frac{9}{14}$
$\quad +2\frac{11}{14}$
_____

**8.** $\quad 6$
$\quad +4\frac{2}{16}$
_____

**9.** $\quad 2\frac{9}{10}$
$\quad -1\frac{5}{10}$
_____

**10.** $\quad 5$
$\quad +4\frac{2}{4}$
_____

**11.** $\quad 2\frac{2}{9}$
$\quad +3\frac{2}{9}$
_____

**12.** $\quad 4\frac{1}{5}$
$\quad -\frac{3}{5}$
_____

## Estimating Sums and Differences of Mixed Numbers (continued)

Estimate each sum or difference.

**13.**    $2\frac{9}{10}$
$+ 1\frac{1}{10}$
_____

**14.**    $5\frac{1}{4}$
$+ 4\frac{2}{4}$
_____

**15.**    $3\frac{2}{9}$
$- \frac{2}{9}$
_____

**16.**    $4\frac{4}{5}$
$+ \frac{3}{5}$
_____

**17.** $2\frac{3}{4} - 1 =$ _____

**18.** $7\frac{2}{6} + 6\frac{5}{6} =$ _____

**19.** $3\frac{2}{5} + 1\frac{2}{5} =$ _____

**20.** $6\frac{1}{8} - 1\frac{5}{8} =$ _____

**21.** $7 - 2\frac{3}{7} =$ _____

**22.** $3\frac{4}{8} + 1\frac{7}{8} =$ _____

**23. Algebra** Estimate the solution: $n + 1\frac{1}{8} = 7\frac{5}{8}$    _____

**24.** Yolanda walked $2\frac{3}{5}$ miles on Monday, $1\frac{1}{5}$ miles on Tuesday, and $3\frac{4}{5}$ miles on Wednesday. Estimate how far she walked on all three days.    _____

**25.** Chris is going to add $2\frac{1}{4}$ cups of a chemical to the swimming pool when he finds out that Richard has already added $1\frac{1}{8}$ cups of the chemical. Estimate how much more Chris should add so that the total is his original amount.    _____

**Test Prep** Choose the correct letter for the answer.

**26.** Estimate $4\frac{2}{6} - 1\frac{5}{6}$.

   **A**  4           **B**  3           **C**  2           **D**  1

# Subtracting Fractions and Mixed Numbers: Like Denominators

## Example

Find $4\frac{1}{3} - 1\frac{2}{3}$.

**Step 1** $\frac{1}{3} < \frac{2}{3}$, so before you subtract, rename $4\frac{1}{3}$ to show more thirds.

$4\frac{1}{3} = \quad 3\frac{4}{3}$

$\quad\quad\quad - 1\frac{2}{3}$

**Step 2** Subtract the fractions. Then subtract the whole numbers.

$3\frac{4}{3}$

$- 1\frac{2}{3}$

$2\frac{2}{3}$

$2\frac{2}{3}$ is in simplest form.

**Step 3** Check to see if you can write the fraction in simplest form.

---

Write answers in simplest form.

**1.** $2\frac{2}{3}$
$- 1\frac{1}{3}$

**2.** $\frac{4}{5}$
$- \frac{3}{5}$

**3.** $5\frac{1}{4}$
$- \frac{2}{4}$

**4.** $6\frac{4}{6}$
$- 1\frac{5}{6}$

**5.** $6\frac{7}{8}$
$- 5\frac{3}{8}$

**6.** $6$
$- 3\frac{3}{9}$

**7.** $4\frac{9}{14}$
$- 2\frac{11}{14}$

**8.** $6$
$- 4\frac{2}{16}$

## Subtracting Fractions and Mixed Numbers: Like Denominators (continued)

Write answers in simplest form.

**9.** $2\frac{9}{10}$
$-1\frac{5}{10}$

**10.** $5$
$-4\frac{2}{4}$

**11.** $\frac{2}{9}$
$-\frac{2}{9}$

**12.** $4\frac{1}{5}$
$-\frac{3}{5}$

**13.** $2\frac{3}{4} - 1 =$ _____

**14.** $7\frac{2}{6} - 6\frac{5}{6} =$ _____

**15.** $3\frac{2}{5} - 1\frac{2}{5} =$ _____

**16.** $6\frac{1}{8} - 1\frac{5}{8} =$ _____

**17.** $7 - 2\frac{3}{7} =$ _____

**18.** $3\frac{4}{8} - 1\frac{7}{8} =$ _____

**19.** Write $2\frac{3}{8}$ to show 8 more eighths. _____

**20.** Write $7\frac{8}{9}$ to show 9 more ninths. _____

**21. Mental Math** If you have $7\frac{1}{4}$ and you subtract $\frac{1}{4}$, how much do you have? _____

**22.** Bernie kicked the ball $8\frac{7}{8}$ yards and Kristen kicked the ball $9\frac{5}{8}$ yards. Who kicked the ball farther? How much farther? _____

**Test Prep** Choose the correct letter for the answer.

**23.** Find $4\frac{2}{6} - 1\frac{5}{6}$.

**A** $3\frac{3}{6}$      **B** $2\frac{1}{2}$      **C** $3\frac{1}{2}$      **D** $5\frac{3}{6}$

# Dividing Greater Numbers

**Example**

Find $8,765 \div 37$.

Estimate: $8,000 \div 40 = 200$.

**Step 1** Divide the hundreds.

| | |
|---|---|
| Divide | $\begin{array}{r} 2 \\ 37\overline{)8,765} \end{array}$ |
| Multiply | $-74$ |
| Subtract | $\overline{\phantom{0}13}$ |
| | Compare: $13 < 37$. |

**Step 2** Divide the tens.

| | |
|---|---|
| Bring down | $\begin{array}{r} 23 \\ 37\overline{)8,765} \end{array}$ |
| Divide | $-74$ |
| Multiply | $\overline{\phantom{0}136}$ |
| Subtract | $-111$ |
| | $\overline{\phantom{00}25}$ |
| | Compare: $25 < 37$. |

**Step 3** Divide the ones.

| | |
|---|---|
| Bring down | $\begin{array}{r} 236 \\ 37\overline{)8,765} \end{array}$ |
| Divide | $-74$ |
| Multiply | $\overline{\phantom{0}136}$ |
| Subtract | $-111$ |
| | $\overline{\phantom{0}255}$ |
| | $-222$ |
| | $\overline{\phantom{00}33}$ |
| | Compare: $33 < 37$. |

So, the answer is 236 R33.

---

**1.** $6,257 \div 22 =$

_____

**2.** $5,731 \div 32 =$

_____

**3.** $8,024 \div 43 =$

_____

**4.** $9,565 \div 89 =$

_____

**5.** $14,804 \div 74 =$

_____

**6.** $6,237 \div 58 =$

_____

**7.** $59,461 \div 27 =$

_____

**8.** $78,081 \div 21 =$

_____

**9.** $4,219 \div 33 =$

_____

**10.** $5,664 \div 63 =$

_____

**11.** $22,718 \div 34 =$

_____

**12.** $5,718 \div 57 =$

_____

## Dividing Greater Numbers (continued)

**13.** 9,093 ÷ 35 =

_____

**14.** 2,213 ÷ 19 =

_____

**15.** 4,558 ÷ 31 =

_____

**16.** 37,378 ÷ 75 =

_____

**17.** 3,712 ÷ 37 =

_____

**18.** 4,650 ÷ 42 =

_____

**19.** 6,035 ÷ 19 =

_____

**20.** 28,711 ÷ 67 =

_____

**21.** 6,590 ÷ 18 =

_____

**22.** 32)9,602

**23.** 94)81,960

**24.** 25)5,345

**25. Math Reasoning** Jodie says that 2,162 ÷ 12 equals 180. Is she correct? Why or why not?

_____

**26.** A book distributor orders 5,175 books on anthropology that it will distribute to 23 bookstores. The book is listed at $26. How many books will each store receive?

_____

**Test Prep** Choose the correct letter for each answer.

**27.** Find 5,264 ÷ 18.

**A** 292     **B** 292 R8     **C** 291 R26     **D** 289 R44

**28.** The math club sold popcorn for $12 each as a fundraiser. A total of 1,368 containers were sold. Each carton contains 24 containers. How many cartons were sold?

**F** 114     **G** 57     **H** 12     **J** 2

# Double Bar Graphs

## Example

Use the graph at the right to answer the questions.

What trend does the graph show?

The number of both types of stations is increasing.

Between which two consecutive years did the number of News/Talk Stations surpass the number of Rock Stations?

Between 1991 and 1992

Between which two consecutive years did the greatest increase in the number of rock stations occur?

Between 1990 and 1991

**U.S. Commercial Radio Stations**



Years

☐ Rock
▨ News/Talk

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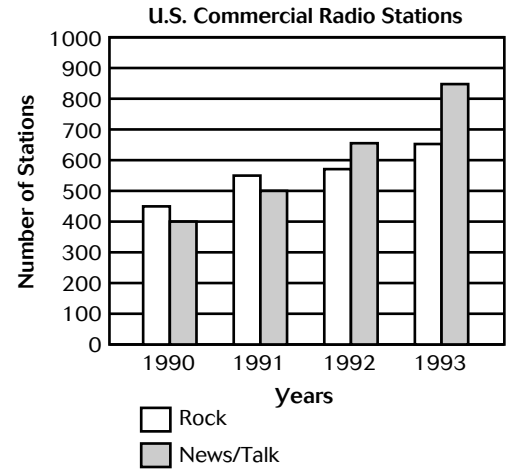
Use the graph at the right to answer Questions 1–4.

**1.** What does each pair of bars represent?

_____

_____

**2.** For which item were the most boxes sold?

_____

**3.** How many more caramels did 5th graders sell as compared to 6th graders?

_____

**4.** Which type of box had the most sales for 5th graders? _____

Which type of box had the most sales for 6th graders? _____

**Fund-raising Sales**



Types of Boxes

☐ Grade 5
▨ Grade 6
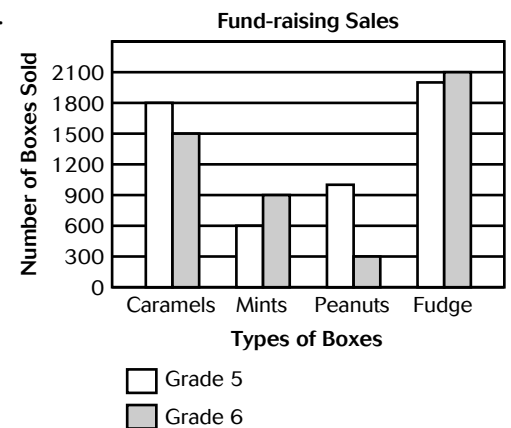
## Double Bar Graphs (continued)

Use the graph at the right to answer Questions 5–9.

**Favorite Subjects**

5. What does each pair of bars represent.

_____

_____

_____



6. For which subject is the difference in choice the greatest?

_____

7. Which subject was chosen as favorite the most?

_____

8. What subject was least popular with 5th graders? _____

   What subject was least popular with 6th graders? _____

9. **Mental Math** What was the total number of students who chose Math as their favorite subject? _____
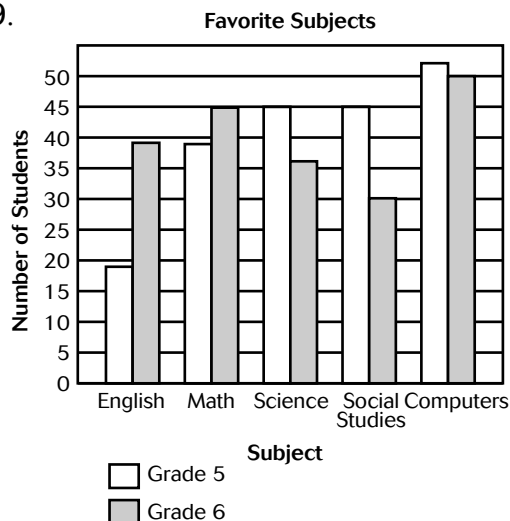
**Test Prep** Choose the correct letter for each answer.

The data in this table will be used to make a double bar graph.

**State Fair Attendance**

| Day | 1996 | 1997 |
|-----|------|------|
| Friday | 8,500 | 10,000 |
| Saturday | 10,000 | 14,000 |
| Sunday | 12,000 | 14,000 |
| Monday | 7,000 | 9,000 |
| Tuesday | 3,500 | 8,000 |
| Wednesday | 4,000 | 8,500 |
| Thursday | 4,500 | 9,000 |

10. In the graph, the attendance figures will be shown on the vertical scale. What information should be shown on the horizontal scale?

    **A** Years     **C** Days of the week

    **B** Weeks     **D** Admission price

11. Which scale would be best for the attendance figure on the vertical axis?

    **F** 10     **H** 500

    **G** 100     **J** 2,000

# Comparing and Ordering Whole Numbers and Decimals

## Example 1

List the numbers in order from least to greatest.

293,400,000          3,125,300,000          800,000          564,100,00

**Step 1** Line up the digits in the ones place. Then start at the left and compare digits in the same place.

**Step 2** Write the numbers in order, starting with the least number.

293,400,000
3,125,300,000
800,000
564,100,000

800,000
293,400,000
564,100,000
3,125,300,000

## Example 2

List the decimals in order from least to greatest.

0.37          0.415          0.392          0.4

**Step 1** Write each decimal with the same number of digits after the decimal point. Do this by writing zeros to the right of the other digits.

0.370
0.415
0.392
0.400

**Step 2** Write the decimals in order, starting with the least number.

0.370
0.392
0.400
0.415

---

Compare. Write $>$, $<$, or $=$ for each $\bigcirc$.

**1.** 2,956 $\bigcirc$ 2,549     **2.** 33,159 $\bigcirc$ 33,201     **3.** 118,952 $\bigcirc$ 11,895

**4.** 5,627 $\bigcirc$ 5,726     **5.** 29,437 $\bigcirc$ 29,437     **6.** 1,295,000 $\bigcirc$ 1,925,000

**7.** 0.98 $\bigcirc$ 0.951     **8.** 3.56 $\bigcirc$ 3.491     **9.** 1.06 $\bigcirc$ 1.065

Name_____

## Comparing and Ordering Whole Numbers and Decimals (continued)

**10.** 27,395,000 ◯ 270,395,000          **11.** 179,000,000 ◯ 17,900,000

**12.** 802,000,000 ◯ 8,020,000,000          **13.** 81,593,676 ◯ 81,593,676

**14.** 5.96 ◯ 5.953      **15.** 7.146 ◯ 7.60      **16.** 1.872 ◯ 1.87

**17.** 0.458 ◯ 0.4      **18.** 9.8 ◯ 9.80      **19.** 3.25 ◯ 3.5

**20.** 8.105 ◯ 8.2      **21.** 6.001 ◯ 6.01      **22.** 0.70 ◯ 0.700

Write the numbers in order from least to greatest.

**23.** 10,126,000  100,126  10,600,000

_____

**24.** 370,000,000  30,700,000  3,700,000

_____

**25.** 9.86  9.6  9.800  9.79

_____

**26.** 0.015  0.15  0.105  0.151

| Area in square miles | |
| --- | --- |
| Brazil | 3,286,472 |
_____

Use the table at the right to answer Exercises 27 and 28.

| Area in square miles | |
| --- | --- |
| Brazil | 3,286,472 |
| Canada | 3,851,788 |
| China | 3,704,426 |
| Russia | 6,592,812 |
| U.S. | 3,617,827 |

**27.** Which country has the largest area?  _____

**28.** Order the countries from smallest to largest.

_____

**Test Prep** Choose the correct letter for each answer.

**29.** Which of the following numbers is the largest?

    **A** 2.967          **B** 2.91          **C** 2.89          **D** 2.99

**30.** Complete the statement:

    1,068,296 square miles ⬤ 1,086,296 square miles

    **F** >          **G** <          **H** =          **J** ~

# Rectangles with the Same Area

## Example

Draw all the different rectangular shapes with an area of
16 square meters. Then, find the perimeter of each rectangle.

You know the formula for the area of a rectangle is $A = l \times w$
and the formula for the perimeter of a rectangle is $P = 2l + 2w$.

1m ▢▢▢▢▢▢▢▢▢▢▢▢▢▢▢▢
16 m

$A = 16 \times 1 = 16 \text{ m}^2$

$P = 2 \times 16 + 2 \times 1 = 34 \text{ m}$

2 m
8 m

$A = 8 \times 2 = 16 \text{ m}^2$

$P = 2 \times 8 + 2 \times 2 = 20 \text{ m}$

4 m
4 m

$A = 4 \times 4 = 16 \text{ m}^2$

$P = 2 \times 4 + 2 \times 4 = 16 \text{ m}$

Each rectangle has an area of 16 square meters. The
perimeters of the rectangles are 34 m, 20 m, and 16 m.

---

Draw a rectangle with the same area as the one shown.
Then find the perimeter of each.

**1.**    $P = 12$ in.

2 in.
4 in.

**2.**    $P = 18$ cm

3 cm
6 cm

**3.**    $P = 22$ m

4 m
7 m

_____

_____

_____

_____

_____

_____

Name_____

## Rectangles with the Same Area (continued)

Draw a rectangle with the same area as the one shown.
Then find the perimeter of each.

**4.** $P = 14$ ft

3 ft

4 ft

_____

_____

**5.** $P = 24$ yd

2 yd

10 yd

_____

_____

**6.** $P = 20$ mm

4 mm

6 mm

_____

_____

Draw a rectangle with the same perimeter as the one shown.
Then find the area of each.

**7.** $A = 4$ in.$^2$

2 in.

2 in.

_____

_____

**8.** $A = 15$ cm$^2$

3 cm

5 cm

_____

_____

**9.** $A = 20$ yd$^2$

4 yd

5 yd

_____

_____

**Test Prep** Choose the correct letter for the answer.

**10.** Which are the dimensions of a rectangle
with the same area as the one at the right?

**A** 11 cm by 2 cm

**B** 30 cm by 2 cm

**C** 22 cm by 1 cm

**D** 10 cm by 3 cm

$P = 22$ cm

5 cm

6 cm

# Rectangles with the Same Area

## Example

Draw all the different rectangular shapes with an area of
16 square meters. Then, find the perimeter of each rectangle.

You know the formula for the area of a rectangle is $A = l \times w$
and the formula for the perimeter of a rectangle is $P = 2l + 2w$.

1 m  
16 m

$A = 16 \times 1 = 16 \ m^2$

$P = 2 \times 16 + 2 \times 1 = 34 \ m$

2 m  
8 m

$A = 8 \times 2 = 16 \ m^2$

$P = 2 \times 8 + 2 \times 2 = 20 \ m$

4 m  
4 m

$A = 4 \times 4 = 16 \ m^2$

$P = 2 \times 4 + 2 \times 4 = 16 \ m$

Each rectangle has an area of 16 square meters. The
perimeters of the rectangles are 34 m, 20 m, and 16 m.

---

Draw a rectangle with the same area as the one shown.
Then find the perimeter of each.

**1.**  $P = 12$ in.

2 in.
4 in.

**2.**  $P = 18$ cm

3 cm
6 cm

**3.**  $P = 22$ m

4 m
7 m

‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗    ‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗    ‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗

‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗    ‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗    ‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗

Name

## Rectangles with the Same Area (continued)

Draw a rectangle with the same area as the one shown.
Then find the perimeter of each.

**4.**  $P = 14$ ft

3 ft

4 ft

_____

_____

**5.**  $P = 24$ yd

2 yd

10 yd

_____

_____

**6.**  $P = 20$ mm

4 mm

6 mm

_____

_____

Draw a rectangle with the same perimeter as the one shown.
Then find the area of each.

**7.**  $A = 4$ in.$^2$

2 in.

2 in.

_____

_____

**8.**  $A = 15$ cm$^2$

3 cm

5 cm

_____

_____

**9.**  $A = 20$ yd$^2$

4 yd

5 yd

_____

_____

**Test Prep**  Choose the correct letter for the answer.

**10.** Which are the dimensions of a rectangle
with the same area as the one at the right?

**A**  11 cm by 2 cm

**B**  30 cm by 2 cm

**C**  22 cm by 1 cm

**D**  10 cm by 3 cm

$P = 22$ cm

5 cm

6 cm

# Rectangles with the Same Area

## Example

Draw all the different rectangular shapes with an area of
16 square meters. Then, find the perimeter of each rectangle.

You know the formula for the area of a rectangle is $A = l \times w$
and the formula for the perimeter of a rectangle is $P = 2l + 2w$.

1m ▭ 16 m    $A = 16 \times 1 = 16 \text{ m}^2$

$P = 2 \times 16 + 2 \times 1 = 34 \text{ m}$

2 m ▭ 8 m    $A = 8 \times 2 = 16 \text{ m}^2$

$P = 2 \times 8 + 2 \times 2 = 20 \text{ m}$

4 m ▭ 4 m    $A = 4 \times 4 = 16 \text{ m}^2$

$P = 2 \times 4 + 2 \times 4 = 16 \text{ m}$

Each rectangle has an area of 16 square meters. The
perimeters of the rectangles are 34 m, 20 m, and 16 m.

Draw a rectangle with the same area as the one shown.
Then find the perimeter of each.

**1.** $P = 12$ in.

2 in. ▭ 4 in.

**2.** $P = 18$ cm

3 cm ▭ 6 cm

**3.** $P = 22$ m

4 m ▭ 7 m

_____   _____   _____

_____   _____   _____

Name _____

## Rectangles with the Same Area (continued)

Draw a rectangle with the same area as the one shown.
Then find the perimeter of each.

**4.**  $P = 14$ ft

3 ft

4 ft

_____

_____

**5.**  $P = 24$ yd

2 yd

10 yd

_____

_____

**6.**  $P = 20$ mm

4 mm

6 mm

_____

_____

Draw a rectangle with the same perimeter as the one shown.
Then find the area of each.

**7.**  $A = 4$ in.$^2$

2 in.

2 in.

_____

_____

**8.**  $A = 15$ cm$^2$

3 cm

5 cm

_____

_____

**9.**  $A = 20$ yd$^2$

4 yd

5 yd

_____

_____

**Test Prep** Choose the correct letter for the answer.

**10.** Which are the dimensions of a rectangle
with the same area as the one at the right?

**A** 11 cm by 2 cm

**B** 30 cm by 2 cm

**C** 22 cm by 1 cm

**D** 10 cm by 3 cm

$P = 22$ cm

5 cm

6 cm

# Areas of Irregular Figures

## Example

Find the area of the irregular figure at the right.

First, divide the figure into three rectangles. Then, add the areas together.

You know the formula used to find the area of a rectangle, $A = l \times w$, where $l$ is the length of the rectangle and $w$ is the width.

1 cm          3 cm
5 cm   3 cm      3 cm   5 cm
            6 cm
            10 cm

1 cm

5 cm
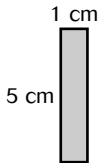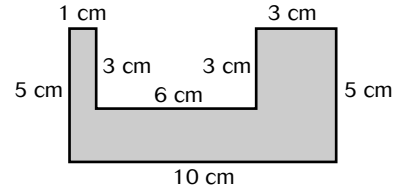
$A = l \times w$

$A = 5\ cm \times 1\ cm$

$A = 5$ square cm

6 cm

2 cm
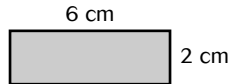
$A = l \times w$

$A = 6\ cm \times 2\ cm$

$A = 12$ square cm

3 cm

5 cm
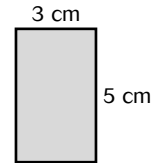
$A = l \times w$

$A = 5\ cm \times 3\ cm$

$A = 15$ square cm

Total area = 5 square cm + 12 square cm + 15 square cm

= 32 square cm or 32 cm$^2$

Find the area of each irregular figure.

**1.**
2 m
3 m
4 m
2 m
6 m

**2.**
3 ft
6 ft
1 ft
2 ft
4 ft

**3.**
12 in.
5 in.
7 in.
8 in.
15 in.
7 in.
2 in.
12 in.

_____        _____        _____
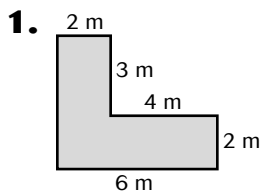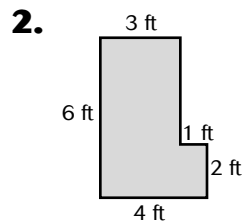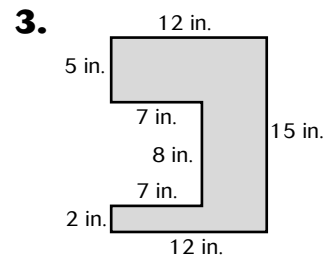
Name_____

## Areas of Irregular Figures (continued)

Find the area of each irregular figure.

**4.**

15 m | 8 m | 7 m | 15 m | 22 m | 7 m

**5.**

5 ft | 4 ft | 8 ft | 4 ft | 9 ft

**6.**

6 cm | 4 cm | 5 cm | 4 cm | 10 cm

_____

_____

_____

**7.**

3 in. | 6 in. | 11 in. | 3 in. | 4 in.

**8.**

5 m | 5 m | 8 m | 6 m | 20 m | 20 m | 8 m | 5 m | 5 m

**9.**

4 yd | 6 yd | 6 yd | 10 yd | 4 yd | 15 yd

_____

_____

_____
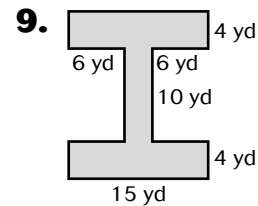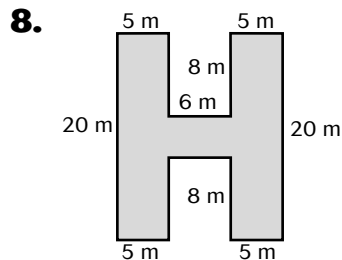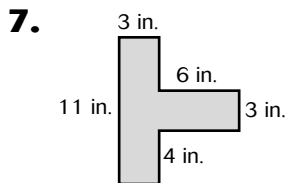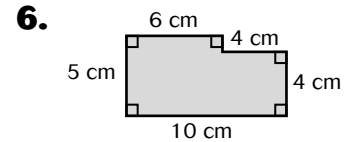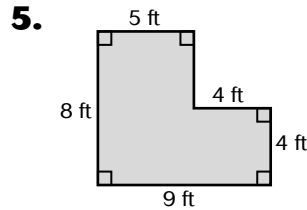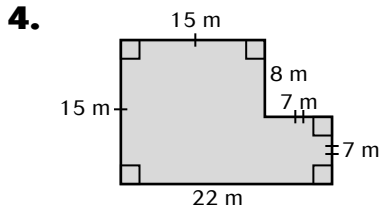
Use the figure at the right for Exercises 10 and 11.

**10.** Bob wants to carpet the room shown. How many square yards of carpet will he need?

_____

3 yd | 2 yd | 1 yd | 6 yd | 9 yd | 2 yd | 1 yd | 2 yd

**11.** If the carpet costs $21.95 per square yard, how much will it cost to carpet the room?

_____
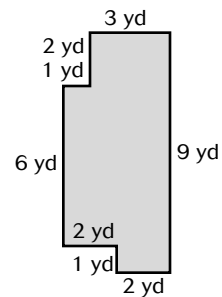
**Test Prep** Choose the correct letter for the answer.

**12.** Jacob wants to tile the room shown at the right. What is the area of the room?

**A** 124 ft$^2$      **C** 153 ft$^2$

**B** 144 ft$^2$      **D** 184 ft$^2$

12 ft | 12 ft | 12 ft | 4 ft | 5 ft | 5 ft | 3 ft
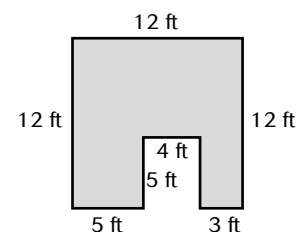
# Slides, Flips, and Turns

## Example

Tell how the letter P was moved to the position of the shaded letter P. Write *slide, flip,* or *turn*.

**a.** P P

**b.** P P

**c.** P P

The shaded P is a mirror image of the unshaded P, so this is a *flip*.
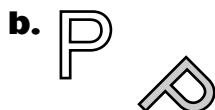
The unshaded P can be rotated around a point to the position of the shaded P, so this is a *turn*.
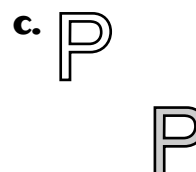
The unshaded P can be moved to the position of the shaded P, so this is a *slide*.

Tell whether each pair of figures is related by a *slide, flip,* or *turn*.

**1.**

_____

**2.**

_____

**3.**

_____

**4.** 5 5

_____

**5.** T T

_____

**6.** S S

_____
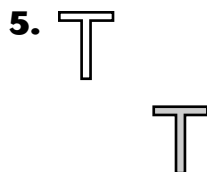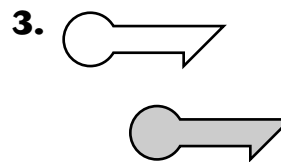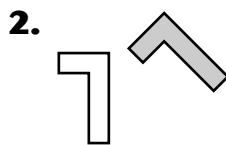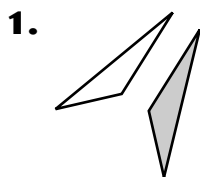
Name⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

## Slides, Flips, and Turns (continued)

Tell whether each pair of figures is related by a *slide, flip,* or *turn.*

**7.** ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

**8.** ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

**9.** ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯
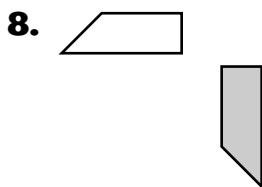
Tell if each figure below is a reflection
of the figure at the right. Write *yes* or *no.*

**10.** ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

**11.** ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

**12.** ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯
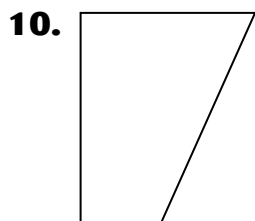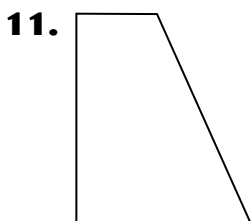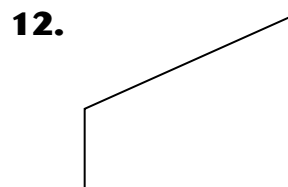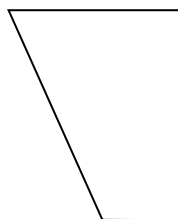
**13. Math Reasoning** What letter do you get if you slide
and turn the letter *d*?     ⎯⎯⎯⎯⎯⎯⎯

**Test Prep** Choose the correct letter for each answer.

**14.** What kind of movement is shown?

    **A** Flip      **C** Turn

    **B** Slide    **D** Twist
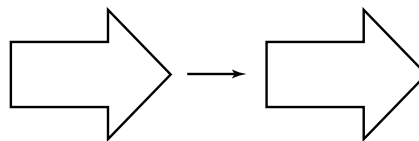
**15.** What kind of movement is shown?

    **F** Flip      **H** Glide

    **G** Slide    **J** Turn
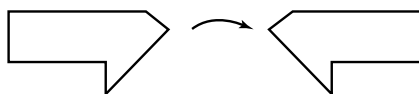
# Line Symmetry

## Example 1

Tell how many lines of symmetry each figure has.

**a.**
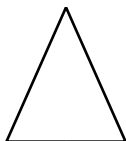
An isosceles triangle has 1 line of symmetry.
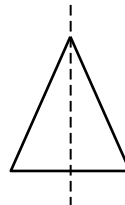
**b.**
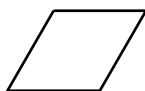
A rhombus has 2 lines of symmetry.
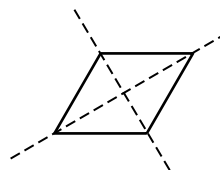
## Example 2

Is the dashed line a line of symmetry for the figure below?

Imagine folding the figure along the dotted line. Since the two halves would not match exactly, the dashed line is not a line of symmetry.
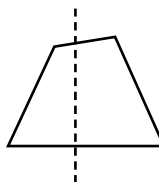
Is the dashed line a line of symmetry? Write *yes* or *no*.

**1.**

**2.**

**3.**

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

**4.**

**5.**

**6.**

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯
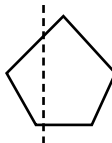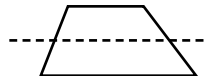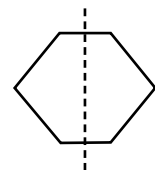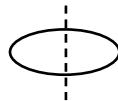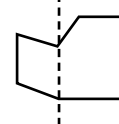
## Line Symmetry (continued)

Tell how many lines of symmetry the figure has.

**7.**

**8.**

**9.**

_____          _____          _____

**10.**

**11.**

**12.**

_____          _____          _____
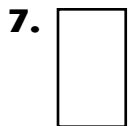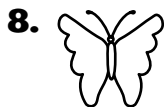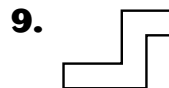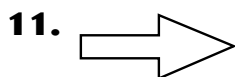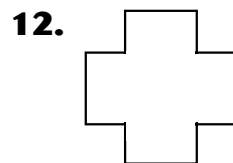
**13.** Draw all of the lines of
symmetry on the figure
at the right.
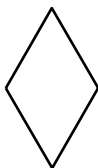
**14.** Draw all of the lines of
symmetry on the hexagon
at the right. Hint: There
are six lines of symmetry.

**Test Prep** Choose the correct letter for the answer.

**15.** Which letter has more than one line of symmetry?

**A** A          **B** S          **C** X          **D** D

# Congruent Figures

## Example 1

Identify congruent figures from the shapes below.

a.

b.

c.

d.

e.
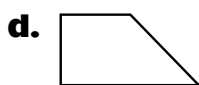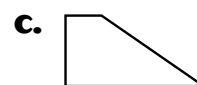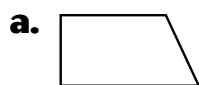
All of the figures are trapezoids, but they do not all have the same shape. Only **a** and **e** have the same size and shape, so they are congruent.

## Example 2

Show some ways to divide a rhombus into congruent parts.
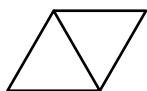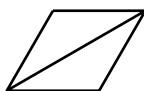
2 congruent triangles        2 congruent triangles        4 congruent right triangles
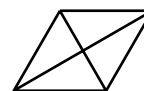
Tell if the two figures are congruent. Write *yes* or *no.*

**1.**

_____

**2.**

_____

**3.**

_____

**4.**

_____

**5.**

_____

**6.**

_____
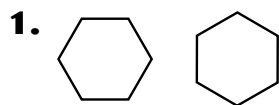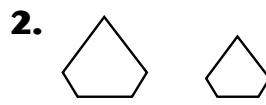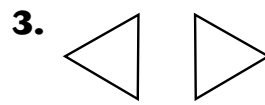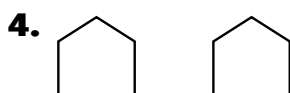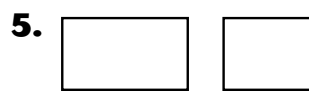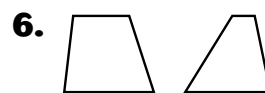
## Congruent Figures (continued)

Tell if the two figures are congruent. Write *yes* or *no*.

**7.**

_____

**8.**

_____

**9.**

_____

**10.**

_____

**11.**

_____

**12.**

_____
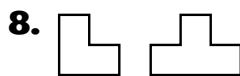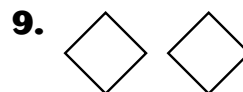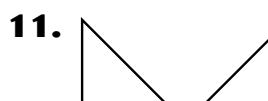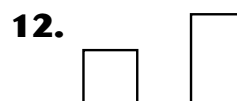
**13.** Divide the isosceles triangle shown at the right into 2 congruent right triangles.

**14.** Divide the hexagon shown at the right into 6 congruent equilateral triangles.
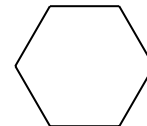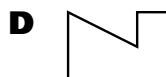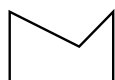
**15.** Divide the rectangle shown at the right into 2 pairs of congruent triangles.
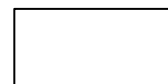
**Test Prep** Choose the correct letter for the answer.

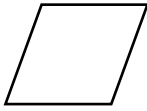**16.** Which figure is congruent to the one to the left?
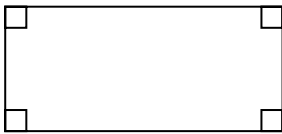
**A**

**C**

**B**

**D**

# Quadrilaterals

## Example
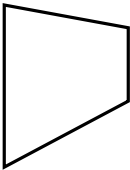
What type of quadrilateral is shown?

**a.** This figure has all sides the same length and opposite sides are parallel, so it is a **rhombus**.
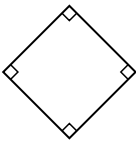
**b.** This figure has both pairs of opposite sides parallel and 4 right angles, so it is a **rectangle**.
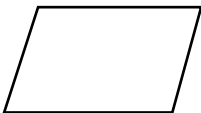
**c.** This figure has only one pair of parallel sides, so it is a **trapezoid**.

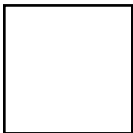**d.** This figure has all sides the same length and 4 right angles, so it is a **square**.
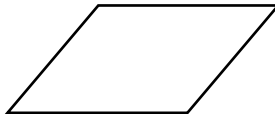
**e.** This figure has both pairs of opposite sides parallel, so it is a **parallelogram**.
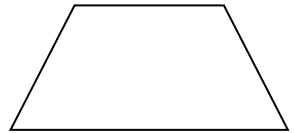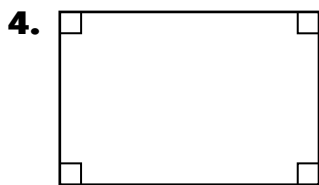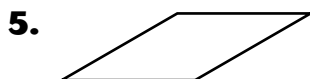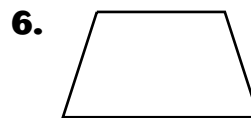
What type of quadrilateral is shown?

**1.**

**2.**

**3.**

## Quadrilaterals (continued)

What type of quadrilateral is shown?

**4.**

_____

**5.**

_____

**6.**

_____

**7.**

_____

**8.**

_____

**9.**

_____

**10.** Plot the set of ordered pairs (0, 0), (1, 4), (6, 0), (7, 4). Draw line segments to connect them in order. Then connect the last ordered pair to the first. Tell what type of quadrilateral is formed.

_____

**11.** I am a parallelogram. I have 4 sides of equal length and no right angles. What am I?

_____

**Test Prep** Choose the correct letter for the answer.

**12.** Which is the name of this quadrilateral?

    **A** Parallelogram     **C** Rhombus

    **B** Trapezoid     **D** Rectangle

# Quadrilaterals

## Example

What type of quadrilateral is shown?

**a.**

This figure has all sides the same length and opposite sides are parallel, so it is a **rhombus**.

**b.**

This figure has both pairs of opposite sides parallel and 4 right angles, so it is a **rectangle**.

**c.**

This figure has only one pair of parallel sides, so it is a **trapezoid**.

**d.**

This figure has all sides the same length and 4 right angles, so it is a **square**.

**e.**

This figure has both pairs of opposite sides parallel, so it is a **parallelogram**.

What type of quadrilateral is shown?

**1.**

**2.**

**3.**

## Quadrilaterals (continued)

What type of quadrilateral is shown?

**4.**

**5.**

**6.**

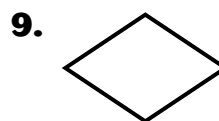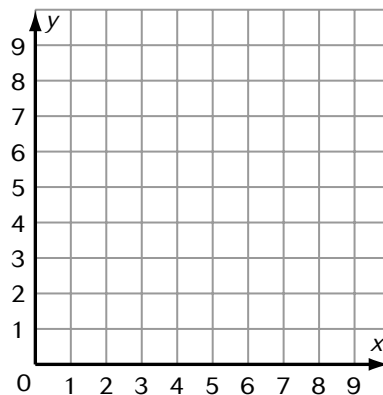_____   _____   _____

**7.**

**8.**

**9.**

_____   _____   _____

**10.** Plot the set of ordered pairs (0, 0), (1, 4), (6, 0), (7, 4). Draw line segments to connect them in order. Then connect the last ordered pair to the first. Tell what type of quadrilateral is formed.

_____

**11.** I am a parallelogram. I have 4 sides of equal length and no right angles. What am I?

_____
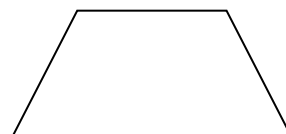
**Test Prep** Choose the correct letter for the answer.

**12.** Which is the name of this quadrilateral?

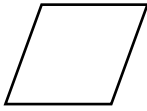   **A** Parallelogram       **C** Rhombus

   **B** Trapezoid         **D** Rectangle

# Points, Lines, Segments, Rays, and Angles

## Example 1

Tell what type of angle is shown.
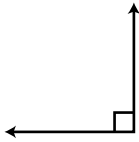
This is a **right angle**.
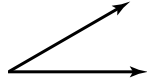
This is an **acute angle**. It is less than a right angle.
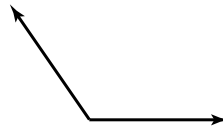
This is an **obtuse angle**. It is greater than a right angle.

This is a **straight angle**. It forms a straight line.

## Example 2

Tell what type of lines are shown.

The two lines do not intersect. They are **parallel lines**.

Tell what type of figure is shown.

**1.**

_____

_____

**2.**

_____

_____

**3.**

_____

_____

**4.**

_____

_____

**5.**

_____

_____

**6.**

_____

_____
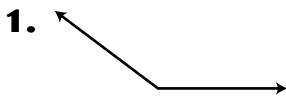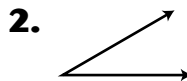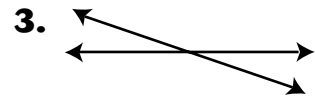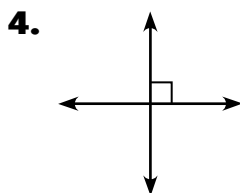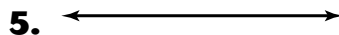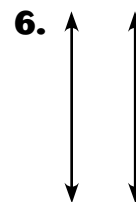
## Points, Lines, Segments, Rays, and Angles (continued)

Tell what type of figure is shown.

**7.** •———————•          **8.** •———————▶          **9.** ◀———————▶          **10.** ●

_____          _____          _____          _____

_____          _____          _____          _____
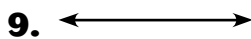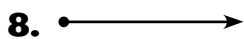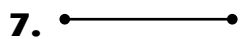
Name the angle formed by each clock's hands.

**11.**

**12.**

**13.**

_____          _____          _____

_____          _____          _____
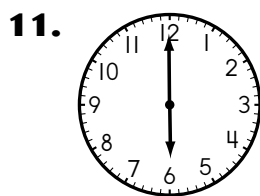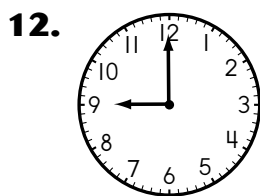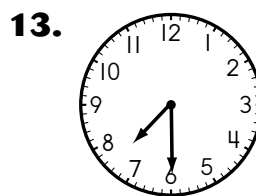
Refer to the drawing at the right.
Name an example of each figure
described below.

**14.** line  _____

**15.** ray  _____

**16.** right angle  _____

**17.** perpendicular lines  _____
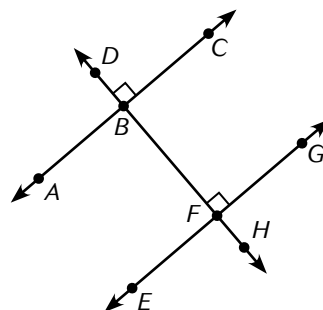
**Test Prep** Choose the correct letter for the answer.

**18.** Which figure shows parallel lines?

**A**          **B**          **C**          **D**
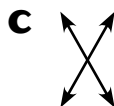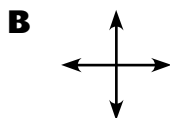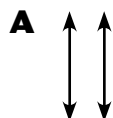
# Adding Decimals

---

## Example 1

Find $4.3 + 2.9$.

$$4 + 3 = 7$$

Line up the decimal points.

$$\begin{array}{r} {}^{1}\phantom{0} \\ 4.3 \\ + 2.9 \\ \hline 7.2 \end{array}$$

Add the tenths, regroup if necessary.

Add the ones, then place the decimal point.

Estimate first by rounding each decimal to the nearest whole number.

Now add to find the actual sum.

The sum is 7.2. This is a reasonable answer because it is close to the estimate of 7.

## Example 2

Find $3.7 + 12 + 6.43$.

Line up the decimals.

$$\begin{array}{r} {}^{1}\;{}^{1}\phantom{0} \\ 3.70 \\ 12.00 \\ + \;\; 6.43 \\ \hline 22.13 \end{array}$$

Write zeros as place holders.

---

Estimate first. Then find each sum.

**1.**  $\begin{array}{r} 2.6 \\ + 3.1 \\ \hline \end{array}$  **2.**  $\begin{array}{r} 0.58 \\ + 6.13 \\ \hline \end{array}$  **3.**  $\begin{array}{r} 5.1 \\ + 3.97 \\ \hline \end{array}$  **4.**  $\begin{array}{r} 16.18 \\ + 10.02 \\ \hline \end{array}$  **5.**  $\begin{array}{r} 4 \\ 1.41 \\ + 13.9 \\ \hline \end{array}$

**6.**  $\begin{array}{r} 10.7 \\ + \;\; 2.38 \\ \hline \end{array}$  **7.**  $\begin{array}{r} 57.09 \\ + 12.62 \\ \hline \end{array}$  **8.**  $\begin{array}{r} 0.89 \\ 2.03 \\ + 6.07 \\ \hline \end{array}$  **9.**  $\begin{array}{r} 25.67 \\ 3 \\ + 11.09 \\ \hline \end{array}$  **10.**  $\begin{array}{r} 8.9 \\ + 2.2 \\ \hline \end{array}$

**11.** $1.1 + 7.9$  **12.** $6.31 + 12.92$  **13.** $81.7 + 16.6$

---

## Adding Decimals (continued)

Estimate first. Then find each sum.

**14.**  5.18
+ 3.24

**15.**  9.37
+ 0.44

**16.**  13.8
+  5.71

**17.**  63.49
+ 8.8

**18.**  $1.75
+  5.15

**19.**  4.9
21.7
+ 35.4

**20.**  363.86
4.3
+ 43.03

**21.**  17.21
49.37
+  3.8

**22.**  $20.50
17.81
+  4.09

**23.**  412.97
3.7
+  19.1

**24. Mental Math** $5.8 + 3.2 + 4.5$ _____

Use the table at the right for Exercises 25–27.

**25.** How much do Derek and Amy weigh together? _____

**26. Algebra** Peppe and someone in his class weigh 123.47 lb together. Who is it?

_____

**27.** How much do the largest and smallest students weigh in all? _____

| Weights of Students in Room B | | |
|---|---|---|
| Jozie | 70.16 | lb |
| Derek | 56.4 | lb |
| Peppe | 58.47 | lb |
| Amy | 51 | lb |
| John | 73.7 | lb |
| Barnaby | 65 | lb |
| Bettie | 62.39 | lb |

**Test Prep** Choose the correct letter for each answer.

**28.** Phillip spent $1.63 on candy and $1.47 on a drink. How much did he spend?

**A** $3.00      **B** $3.10      **C** $3.20      **D** $2.50      **E** NH

**29.** Plattville received 1.87 inches of rain on Friday and 4.7 inches of rain on Saturday. How much rain did they receive in all?

**F** 5.57      **G** 6.5      **H** 6.75      **J** 5.5      **K** NH

# Relating Mixed Numbers and Decimals

## Example 1

Write $1\frac{6}{10}$ as a decimal.

$1\frac{6}{10} = 1.6$

Both are called one and six tenths.
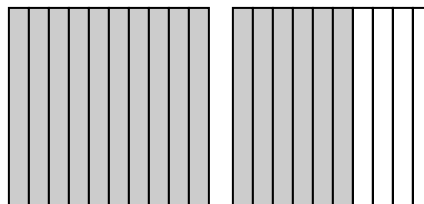
## Example 2

Write $\frac{5}{4}$ as a decimal.

Change $\frac{5}{4}$ to a mixed number. $\frac{5}{4} = 1\frac{1}{4}$

Find an equivalent fraction with
10 or 100 in the denominator. $\qquad 1\frac{1}{4} = 1\frac{25}{100}$

$1\frac{25}{100} = 1.25$

Both are called one and twenty-five hundredths.

---
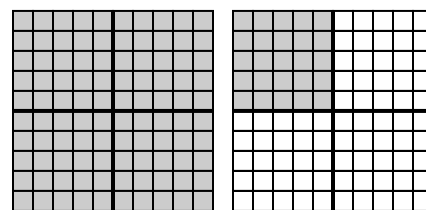
Write each number as a decimal.

**1.** $4\frac{9}{10}$      **2.** $17\frac{81}{100}$      **3.** $6\frac{1}{2}$      **4.** $51\frac{2}{100}$      **5.** $\frac{9}{4}$

_____     _____     _____     _____     _____

**6.** $8\frac{13}{100}$      **7.** $\frac{9}{2}$      **8.** $5\frac{3}{4}$      **9.** $63\frac{4}{20}$      **10.** $12\frac{11}{50}$

_____     _____     _____     _____     _____

Write each decimal as a fraction or mixed number.

**11.** 0.7      **12.** 5.1      **13.** 16.15      **14.** 41.06      **15.** 56.2

_____     _____     _____     _____     _____

**16.** 2.04      **17.** 0.34      **18.** 7.70      **19.** 90.08      **20.** 0.05

_____     _____     _____     _____     _____

## Relating Mixed Numbers and Decimals (continued)

Write each number as a decimal.

**21.** $3\frac{3}{10}$     **22.** $13\frac{12}{100}$     **23.** $\frac{27}{10}$     **24.** $9\frac{9}{100}$     **25.** $\frac{16}{5}$

_____    _____    _____    _____    _____

Write each decimal as a fraction or mixed number.

**26.** 1.3     **27.** 27.60     **28.** 3.07     **29.** 0.49     **30.** 40.01

_____    _____    _____    _____    _____

**31.** Daisy pitches for the Duncanville Dragons. Her earned run average is 3.62. Write her ERA as a mixed number. _____

**32. Math Reasoning** Franklin's ERA is 2.07 and Evan's ERA is 2.70. Which pitcher has the lower ERA? Explain.

_____

_____

**33. Mental Math** Gloria picked three pumpkins. The first weighed 8.63 pounds. The second weighed 2 pounds more than the first. The third weighed six pounds more than the second. What is the weight of the biggest pumpkin? Then write it as a decimal and a fraction.

_____

**34.** Brad went to the doctor for a check-up. Brad's weight was 64.08 pounds. Write Brad's weight as a mixed number. _____

**Test Prep** Choose the correct letter for each answer.

**35.** Which decimal is equal to $\frac{12}{5}$?

   **A** 2.4       **B** 2.04       **C** 4.2       **D** 1.4

**36.** Which fraction is not equal to 1.5?

   **F** $1\frac{5}{10}$       **G** $1\frac{1}{2}$       **H** $1\frac{3}{7}$       **J** $1\frac{50}{100}$

# Comparing and Ordering Fractions

**Example**

Compare: $\dfrac{4}{12}$ ● $\dfrac{7}{9}$

Rewrite the fractions using the same denominator.
Think: What number has 7 and 9 as factors?

$$\dfrac{4}{12} = \dfrac{12}{36} \qquad \dfrac{7}{9} = \dfrac{28}{36}$$

Compare the new fractions: $\dfrac{12}{36} < \dfrac{28}{36}$

Write the comparison using the original fractions: $\qquad \dfrac{4}{12} < \dfrac{7}{9}$

Compare. Write $>$, $<$, or $=$ for each ●.

**1.** $\dfrac{1}{4}$ ● $\dfrac{3}{4}$

**2.** $\dfrac{5}{10}$ ● $\dfrac{3}{10}$

**3.** $\dfrac{2}{3}$ ● $\dfrac{5}{9}$

**4.** $\dfrac{7}{9}$ ● $\dfrac{28}{36}$

**5.** $\dfrac{6}{15}$ ● $\dfrac{2}{5}$

**6.** $\dfrac{10}{14}$ ● $\dfrac{4}{7}$

**7.** $\dfrac{3}{5}$ ● $\dfrac{7}{12}$

**8.** $\dfrac{4}{14}$ ● $\dfrac{2}{5}$

**9.** $\dfrac{4}{7}$ ● $\dfrac{2}{9}$

**10.** $\dfrac{1}{5}$ ● $\dfrac{2}{8}$

**11.** $\dfrac{3}{8}$ ● $\dfrac{2}{6}$

**12.** $\dfrac{4}{6}$ ● $\dfrac{5}{9}$

## Comparing and Ordering Fractions (continued)

Compare. Write $>$, $<$, or $=$ for each ●.

**13.** $\dfrac{3}{5}$ ● $\dfrac{7}{15}$

**14.** $\dfrac{8}{10}$ ● $\dfrac{13}{15}$

**15.** $\dfrac{2}{8}$ ● $\dfrac{1}{4}$

**16.** $\dfrac{7}{10}$ ● $\dfrac{3}{4}$

**17.** $\dfrac{6}{14}$ ● $\dfrac{3}{7}$

**18.** $\dfrac{8}{12}$ ● $\dfrac{5}{6}$

Write each set of fractions in order from least to greatest.

**19.** $\dfrac{1}{4}, \dfrac{6}{7}, \dfrac{3}{5}$

**20.** $\dfrac{5}{8}, \dfrac{8}{10}, \dfrac{2}{7}$

**21.** $\dfrac{5}{9}, \dfrac{10}{12}, \dfrac{5}{7}$

**22.** $\dfrac{3}{9}, \dfrac{12}{15}, \dfrac{5}{6}$

_____  _____  _____  _____

**23. Math Reasoning** Give 3 fractions with different denominators that are less than $\dfrac{2}{3}$.

_____

**24.** Jim's height is 4 feet, $3\dfrac{3}{4}$ inches. Rex's height is 4 feet, $3\dfrac{3}{8}$ inches. Joan's height is 4 feet, $3\dfrac{7}{16}$ inches. Who is the tallest? Who is the shortest?

_____

**25.** Two students are writing stories. Eric's story is $\dfrac{2}{3}$ of a page. Jason's story is $\dfrac{5}{8}$ of a page. Who's story is longer?

_____

**Test Prep** Choose the correct letter for the answer.

**26.** Which fraction is greater than $\dfrac{5}{9}$?

**A** $\dfrac{3}{6}$     **B** $\dfrac{1}{3}$     **C** $\dfrac{7}{18}$     **D** $\dfrac{2}{3}$

# Zeros in the Quotient

**Example**

Find $4{,}223 \div 7$.

Estimate first: $4200 \div 7 = 600$.

**Step 1**
Use the estimate to
place the first digit.
Divide the hundreds.
Multiply, subtract, compare

$$\begin{array}{r} 6\phantom{,000} \\ 7\overline{)4{,}223} \\ -42\phantom{00} \\ \hline 0\phantom{0} \end{array}$$

**Step 2**
Bring down
the tens.
There aren't enough
tens to divide into 7
groups. Write a 0 in
the quotient.

$$\begin{array}{r} 60\phantom{0} \\ 7\overline{)4{,}223} \\ -42\phantom{0} \\ \hline 02\phantom{} \\ -0 \\ \hline 2 \end{array}$$

**Step 3**
Bring down
the ones.
Divide.
Multiply and subtract.
The remainder is 2.

$$\begin{array}{r} 603 \text{ R2} \\ 7\overline{)4{,}223} \\ -42\phantom{0} \\ \hline 02\phantom{} \\ -0 \\ \hline 23 \\ -21 \\ \hline 2 \end{array}$$

**Step 4**
Check by multiplying.

Add the remainder.

$$\begin{array}{r} 603 \\ \times\phantom{0}7 \\ \hline 4{,}221 \\ +\phantom{00}2 \\ \hline 4{,}223 \end{array}$$

---

**1.** $8\overline{)824}$

**2.** $2\overline{)611}$

**3.** $9\overline{)9{,}243}$

**4.** $5\overline{)545}$

**5.** $7\overline{)2{,}124}$

**6.** $3\overline{)617}$

**7.** $4\overline{)3{,}631}$

**8.** $6\overline{)1{,}831}$

**9.** $4\overline{)4{,}114}$

Name _____

## Zeros in the Quotient (continued)

**10.** $3\overline{)32}$          **11.** $5\overline{)541}$          **12.** $7\overline{)285}$

**13.** $6\overline{)3,626}$          **14.** $9\overline{)1,856}$          **15.** $4\overline{)432}$

**16.** $7\overline{)632}$          **17.** $5\overline{)302}$          **18.** $2\overline{)2,191}$

**19.** $1,635 \div 8 =$          **20.** $7,118 \div 7 =$          **21.** $3,250 \div 8 =$

_____          _____          _____

**22.** $802 \div 4 =$          **23.** $2,530 \div 5 =$          **24.** $645 \div 6 =$

_____          _____          _____

**25. Algebra** Follow each rule.

Rule: Divide by 3

| Input | Output |
|-------|--------|
| 324 | _____ |
| 606 | _____ |
| 612 | _____ |

Rule: Divide by 5

| Input | Output |
|-------|--------|
| 505 | _____ |
| 2,505 | _____ |
| 3,045 | _____ |

Rule: Divide by 8

| Input | Output |
|-------|--------|
| 864 | _____ |
| 1,624 | _____ |
| 3,208 | _____ |

**26.** The cafeteria has 1,630 ounces of juice on hand. Each serving contains 8 ounces. How many servings do they have?

_____

**Test Prep** Choose the correct letter for each answer.

**27.** Beth saved $213 in seven weeks for a new television that costs $199. If she saved about the same amount each week, how much did she save per week?

**A** over $30   **B** under $30  **C** under $14  **D** under $29  **E** NH

# Dividing Multidigit Numbers

**Example**

Find 4,323 ÷ 7.

Estimate first: 4,200 ÷ 7 = 600.

**Step 1**
Use the estimate to
place the first digit.
Divide the hundreds.
Multiply, subtract, compare.

$$\begin{array}{r} 6 \\ 7\overline{)4,323} \\ -42 \\ \hline 1 \end{array}$$

**Step 2**
Bring down
the tens.
Divide.
Multiply, subtract,
compare.

$$\begin{array}{r} 61 \\ 7\overline{)4,323} \\ -42 \\ \hline 12 \\ -7 \\ \hline 5 \end{array}$$

**Step 3**
Bring down
the ones.
Divide.
Multiply and subtract.
The remainder is 4.

$$\begin{array}{r} 617 \text{ R4} \\ 7\overline{)4,323} \\ -42 \\ \hline 12 \\ -7 \\ \hline 53 \\ -49 \\ \hline 4 \end{array}$$

**Step 4**
Check by multiplying.

$$\begin{array}{r} 617 \\ \times\quad 7 \\ \hline 4,319 \\ +\quad 4 \\ \hline 4,323 \end{array}$$

---

**1.** $8\overline{)624}$

**2.** $2\overline{)30}$

**3.** $9\overline{)8,244}$

**4.** $5\overline{)465}$

**5.** $7\overline{)2,304}$

**6.** $3\overline{)637}$

**7.** $4\overline{)3,565}$

**8.** $6\overline{)1,867}$

**9.** $4\overline{)4,514}$

Name_____

## Dividing Multidigit Numbers (continued)

**10.** 3)48　　　　　　**11.** 5)85　　　　　　**12.** 7)245

**13.** 6)3,726　　　　　**14.** 9)1,956　　　　　**15.** 4)78

**16.** 7)277　　　　　　**17.** 5)312　　　　　　**18.** 2)1,591

**19.** 1,235 ÷ 8 =　　　**20.** 7,818 ÷ 7 =　　　**21.** 1,590 ÷ 8 =

_____　　　_____　　　_____

**22.** 902 ÷ 4 =　　　　**23.** 2,690 ÷ 5 =　　　**24.** 345 ÷ 6 =

_____　　　_____　　　_____

**25. Algebra** Find 5,322 ÷ $n$ if $n$ = 6.　　　　　_____

**26.** An office manager orders envelopes to divide among
7 employees. He orders 12 boxes, or 240 envelopes. How
many envelopes will each employee receive? Will there be
any left over? If so, how many?

_____

**Test Prep** Choose the correct letter for each answer.

**27.** Find 441 ÷ 7.

　**A** 630　　　**B** 64 R6　　　**C** 62 R7　　　**D** 63　　　**E** NH

**28.** A company prints 248 greeting cards. One box contains
8 cards and sells for $4. How many boxes of cards
were printed?

　**F** 62　　　**G** 31　　　**H** 32　　　**J** 124　　　**K** NH

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# Mental Math: Dividing Multiples of 10, 100, and 1,000

**Example**

Find $1{,}500 \div 5$.

Use a basic fact and look for a pattern with zeros.

$15 \div 5 = 3$
$150 \div 5 = 30$
$1{,}500 \div 5 = 300$

So, $1{,}500 \div 5 = 300$.

---

**1.** $360 \div 6 =$ _____ **2.** $2{,}800 \div 7 =$ _____ **3.** $160 \div 2 =$ _____

**4.** $450 \div 9 =$ _____ **5.** $2{,}100 \div 7 =$ _____ **6.** $640 \div 8 =$ _____

**7.** $3{,}600 \div 4 =$ _____ **8.** $180 \div 6 =$ _____ **9.** $4{,}200 \div 7 =$ _____

**10.** $540 \div 6 =$ _____ **11.** $72{,}000 \div 8 =$ _____ **12.** $3{,}000 \div 6 =$ _____

**13.** $2{,}400 \div 4 =$ _____ **14.** $2{,}400 \div 8 =$ _____ **15.** $600 \div 2 =$ _____

**16.** $1{,}200 \div 3 =$ _____ **17.** $2{,}800 \div 7 =$ _____ **18.** $2{,}000 \div 5 =$ _____

Name_____

**Mental Math: Dividing Multiples of 10, 100, and 1,000** (continued)

**19.** $810 \div 9 =$ _____   **20.** $3,500 \div 7 =$ _____   **21.** $2,100 \div 7 =$ _____

**22.** $14,000 \div 2 =$ _____   **23.** $80 \div 4 =$ _____   **24.** $4,900 \div 7 =$ _____

**25.** $6\overline{)420}$   **26.** $7\overline{)560}$   **27.** $9\overline{)2700}$

**28.** $5\overline{)250}$   **29.** $4\overline{)320}$   **30.** $3\overline{)21,000}$

**31. Mental Math** Explain how to find $240 \div 4$ using mental math.

_____

**32.** Mr. Doyle's class is collecting canned goods. Last year the school record was 550 cans. This year the class goal is to collect 600 cans. There are 3 collection sites. What should the goal be at each collection site if they plan to collect the same amount at all 3?

_____

**Test Prep** Choose the correct letter for each answer.

**33.** There are 40 books in a stack. The teacher wants to divide the books equally between 2 students. How many books will each student receive?

  **A** 2      **B** 20      **C** 10      **D** 80      **E** NH

**34.** A new coat costs $100. Stan plans to save for 5 months. How much will he have to save each month to buy the coat?

  **F** $50      **G** $5      **H** $2      **J** $20      **K** NH

# Place Value Through Millions

### Example 1

Write 705,637,023 in word form and in short word form.

Word form: seven hundred five million, six hundred thirty-seven thousand, twenty-three in standard form; Short word form: 705 million, 637 thousand, 23

### Example 2

Write the value of the underlined digit in 3<u>6</u>,925,048. The underlined digit is in the millions place, so the value of the underlined digit is 6,000,000.

### Example 3

Write 21,304,201 in expanded form.

*Expanded form:* 20,000,000 + 1,000,000 + 300,000 + 4,000 + 200 + 1

Write each number in word form and in short word form.

**1.** 2,160,500 _____

_____

_____

**2.** 91,207,040 _____

_____

_____

**3.** 510,200,450 _____

_____

_____

## Place Value Through Millions (continued)

Write the value of the underlined digit.

**4.** 4,5<u>6</u>2,398

**5.** 1<u>5</u>,347,025

**6.** 37,81<u>4</u>,956

_____

_____

_____

**7.** <u>5</u>26,878,953

**8.** 782,354,0<u>6</u>5

**9.** 9<u>1</u>8,403,760

_____

_____

_____

**10.** An underground rail system in Osaka, Japan carries 988,600,000 passengers per year. Write this number in expanded form.

_____

**11. Algebra** What missing number would make the number sentence 3,589,000 = 3,000,000 + ■ + 80,000 + 9,000 true?

_____

**12. Math Reasoning** What number can be added to 999,990 to make 1,000,000?

_____

**Test Prep** Choose the correct letter for each answer.

**13.** Which of the following gives the value of the underlined digit in the number <u>5</u>2,685,941?

**A** 5,000,000 **B** 50,000 **C** 500,000 **D** 50,000,000 **E** NH

**14.** The United States has about 147,200,000 car owners. Which of the following shows this number in expanded form?

**F** 100,000 + 40,000 + 7,000 + 200

**G** 100,000,000 + 40,000,000 + 7,000,000 + 200,000

**H** 100,000,000 + 40,000,000 + 7,000 + 200

**J** 10,000,000 + 4,000,000 + 700,000 + 200

*Source: Factastic Book of 1001 Lists, Russell Ash, DK Publishing, 1999, pages 75, 71, and 67 respectively.*

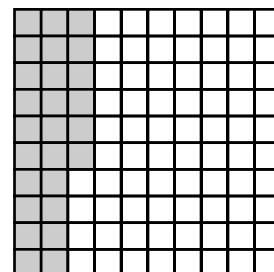# Decimals in Hundredths

## Example

There are 100 squares in the grid at the right. What part of the grid is shaded?

The answer can be expressed in words, by using a fraction or a decimal.

**Words:** twenty-six hundredths

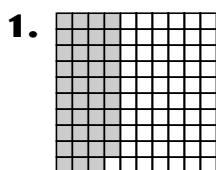**Fraction:** $\frac{26}{100}$

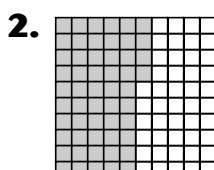**Decimal:** 0.26

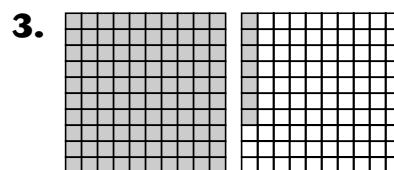What part of the grid is not shaded?

**Words:** seventy-four hundredths

**Fraction:** $\frac{74}{100}$

**Decimal:** 0.74

---

Write a fraction and a decimal for the shaded part.

**1.**

**2.**

**3.**

_____      _____      _____

Write each as a decimal.

**4.** $\frac{63}{100}$     **5.** $\frac{47}{100}$     **6.** $\frac{3}{100}$     **7.** $\frac{84}{100}$     **8.** $\frac{77}{100}$

_____     _____     _____     _____     _____

**9.** nineteen hundredths     **10.** seventy-one hundredths     **11.** thirty-five hundredths

_____     _____     _____

## Decimals in Hundredths (continued)

Write each as a decimal.

**12.** $\frac{6}{100}$      **13.** $\frac{29}{100}$      **14.** $\frac{51}{100}$      **15.** $\frac{40}{100}$      **16.** $\frac{67}{100}$

_____     _____     _____     _____     _____

**17.** ninety-six hundredths     **18.** one and eighty-eight hundredths     **19.** two and one hundredth

_____        _____        _____

**20. Mental Math** Marco found $0.38 on Monday, $1.00 on Tuesday, and $0.75 on Wednesday. How much did he find on Monday and Tuesday? Express your answer using a dollar sign and a decimal point.

_____

Katie bought 100 plants for her garden. She bought 37 tomato plants, 8 cucumber plants, 12 pumpkin plants, and the rest of her plants were onions. Use this information in Questions 21–23.

**21.** Write a fraction and a decimal to express how many of the plants are tomatoes.

_____

**22.** How many of her plants are cucumbers and pumpkins? Express your answer as a decimal.

_____

**23. Algebra** Katie bought 57 plants that are not onions. How many of her plants are onions? What missing number makes 57 + ■ = 100 true? Then express your answer as a decimal.

_____

**Test Prep** Choose the correct letter for each answer.

**24.** What is the value of the 7 in 4.07?

    **A** 7 hundredths    **B** 7 dollars       **C** 7 tenths       **D** 7 halves

**25.** Brandon has 100 sports cards. 62 are baseball cards. What part of his cards are baseball cards?
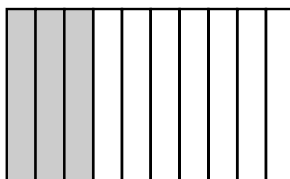
    **F** 0.43        **G** 0.75        **H** 0.50        **J** 0.62

# Decimals in Tenths

### Example 1

What part of the shape is shaded?

The answer may be expressed in different ways.
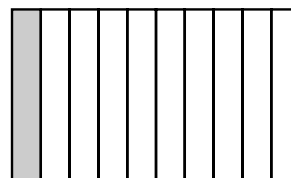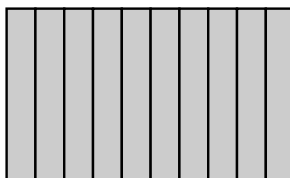
**Fraction:**  $\frac{3}{10}$

**Decimal:**  0.3

**Words:**  three tenths

### Example 2

What part of the shapes are shaded?

One whole shape is shaded and one tenth of the other one.
One and one tenth is shaded. It can be written $1\frac{1}{10}$ or 1.1.

Write each as a decimal.

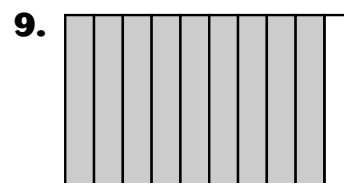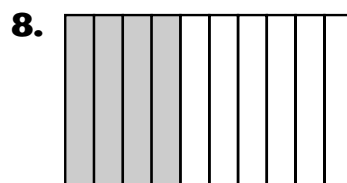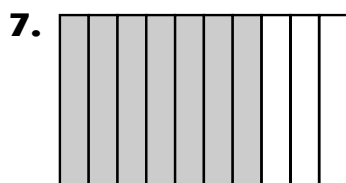**1.** $\frac{2}{10}$ _____

**2.** $\frac{7}{10}$ _____

**3.** $\frac{5}{10}$ _____

**4.** one tenth

**5.** nine tenths

**6.** six tenths

_____

_____

_____

Write a fraction and a decimal for each shaded part.
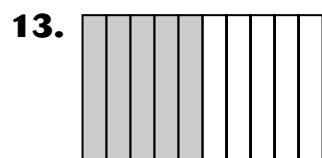
**7.**
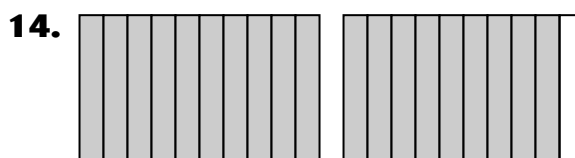
**8.**

**9.**

_____

_____

_____

## Decimals in Tenths (continued)

Write each as a fraction and a decimal.

**10.** eight tenths

**11.** one and seven tenths

**12.** six and nine tenths

_____

_____

_____

Write a fraction and a decimal for each shaded part.

**13.**



**14.**



_____

_____

The picture at the right shows the books Jason read in September.
Use the picture for Exercises 15 and 16.



**15.** Write a fraction and a decimal to
describe the fiction books Jason read. _____

**16.** Write a fraction and a decimal to
describe the nonfiction books Jason read. _____

**17.** In October Jason read another ten books.
Only two were nonfiction. Express the
nonfiction books he read in October as a decimal. _____

**18. Algebra** How many fiction books did Jason read in October?
What missing number makes $2 + \blacksquare = 10$ true?
Then express your answer as a fraction and a decimal.

_____
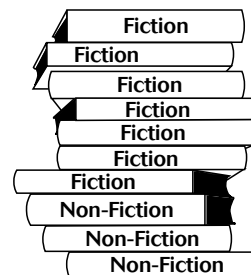
**Test Prep** Choose the correct letter for each answer.

**19.** How is six and five tenths expressed as a decimal?

**A** 6.510     **B** 6.05     **C** 6.5     **D** 5.6

**20.** Juan had $10. He spent $7. Which fraction shows the
amount of his money he spent?

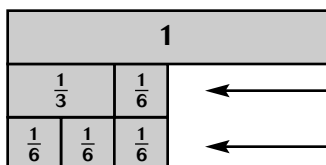**F** $\frac{3}{10}$     **G** $\frac{3}{7}$     **H** $\frac{10}{7}$     **J** $\frac{7}{10}$

# Adding and Subtracting Fractions with Unlike Denominators

**Example**

Find $\frac{1}{3} + \frac{1}{6}$.

| 1 |
|---|

| $\frac{1}{3}$ | $\frac{1}{6}$ |
|---|---|

| $\frac{1}{6}$ | $\frac{1}{6}$ | $\frac{1}{6}$ |
|---|---|---|

← ————— The denominators are different.

← ————— Use fraction strips to find equivalent fractions with the same denominators.

$\frac{2}{6} + \frac{1}{6} = \frac{3}{6}$

Find each sum or difference. You may use fraction strips to help.

**1.** $\frac{2}{3} + \frac{1}{6} = $ _____

**2.** $\frac{1}{5} + \frac{3}{10} = $ _____

**3.** $\frac{3}{8} + \frac{2}{4} = $ _____

**4.** $\frac{5}{6} - \frac{2}{3} = $ _____

**5.** $\frac{3}{5} - \frac{1}{10} = $ _____

**6.** $\frac{3}{4} - \frac{1}{2} = $ _____

**7.** $\frac{3}{4} + \frac{2}{8} = $ _____

**8.** $\frac{1}{2} - \frac{1}{4} = $ _____

**9.** $\frac{1}{6} + \frac{5}{12} = $ _____

**10.** $\frac{1}{8} + \frac{1}{2} = $ _____

**11.** $\frac{2}{3} - \frac{2}{12} = $ _____

**12.** $\frac{1}{2} - \frac{2}{4} = $ _____

**13.** $\frac{3}{4} - \frac{3}{8} = $ _____

**14.** $\frac{1}{4} + \frac{4}{8} = $ _____

**15.** $\frac{2}{3} + \frac{2}{6} = $ _____

## Adding and Subtracting Fractions with Unlike Denominators (continued)

Find each sum or difference. You may use fraction strips to help.

**16.** $\dfrac{3}{4} - \dfrac{1}{8} =$ _____

**17.** $\dfrac{2}{6} + \dfrac{1}{3} =$ _____

**18.** $\dfrac{4}{5} - \dfrac{2}{10} =$ _____

**19.** $\dfrac{2}{4} + \dfrac{1}{8} =$ _____

**20.** $\dfrac{4}{6} - \dfrac{3}{12} =$ _____

**21.** $\dfrac{7}{8} - \dfrac{1}{2} =$ _____

**22.** $\dfrac{3}{4} - \dfrac{2}{8} =$ _____

**23.** $\dfrac{4}{6} - \dfrac{1}{3} =$ _____

**24.** $\dfrac{3}{8} + \dfrac{1}{2} =$ _____

**25. Math Reasoning** Find 3 fractions that are equivalent to $\dfrac{1}{2}$.

_____

**26.** Renee watched $\dfrac{2}{3}$ of the movie and Timothy watched $\dfrac{3}{6}$ of the movie. How much more did Renee watch than Timothy? _____

**27.** A jar is filled with red, blue, and green marbles. Half of the marbles are red. One-third of the marbles are blue. One-sixth of the marbles are green. What fraction of the marbles are either red or blue? _____

**Test Prep** Choose the correct letter for each answer.

**28.** Find $\dfrac{5}{6} - \dfrac{1}{12}$.

**A** $\dfrac{4}{6}$    **B** $\dfrac{9}{12}$    **C** $\dfrac{4}{12}$    **D** $\dfrac{3}{6}$

**29.** Rick and Laura are painting a fence. Rick has painted $\dfrac{3}{8}$ of the fence and Laura has painted $\dfrac{1}{4}$. How much of the fence have Laura and Rick painted?

**F** $\dfrac{0}{8}$    **G** $\dfrac{3}{4}$    **H** $\dfrac{3}{6}$    **J** $\dfrac{5}{8}$

# Multiplying Greater Numbers

## Example

Find $1,376 \times 3$.

**Step 1**
Multiply the ones.
Regroup as needed.

$$\begin{array}{r} \overset{1}{1,376} \\ \times \quad 3 \\ \hline 8 \end{array}$$

**Step 2**
Multiply the tens.
Add any extra tens.
Regroup as needed.

$$\begin{array}{r} \overset{2\ 1}{1,376} \\ \times \quad 3 \\ \hline 28 \end{array}$$

**Step 3**
Multiply the hundreds.
Add any extra hundreds.
Regroup as needed.

$$\begin{array}{r} \overset{1\ 2\ 1}{1,376} \\ \times \quad 3 \\ \hline 128 \end{array}$$

**Step 4**
Multiply the thousands.
Add any extra thousands.

$$\begin{array}{r} \overset{1\ 2\ 1}{1,376} \\ \times \quad 3 \\ \hline 4128 \end{array}$$

So, $1,376 \times 3 = 4,128$.

---

**1.** $\begin{array}{r} 1127 \\ \times \quad 5 \\ \hline \end{array}$

**2.** $\begin{array}{r} 1225 \\ \times \quad 3 \\ \hline \end{array}$

**3.** $\begin{array}{r} 3121 \\ \times \quad 7 \\ \hline \end{array}$

**4.** $\begin{array}{r} 4234 \\ \times \quad 4 \\ \hline \end{array}$

**5.** $\begin{array}{r} 3127 \\ \times \quad 3 \\ \hline \end{array}$

**6.** $\begin{array}{r} 2281 \\ \times \quad 6 \\ \hline \end{array}$

**7.** $\begin{array}{r} 6022 \\ \times \quad 4 \\ \hline \end{array}$

**8.** $\begin{array}{r} 3132 \\ \times \quad 5 \\ \hline \end{array}$

**9.** $\begin{array}{r} 6114 \\ \times \quad 3 \\ \hline \end{array}$

**10.** $\begin{array}{r} 8432 \\ \times \quad 2 \\ \hline \end{array}$

**11.** $\begin{array}{r} 4172 \\ \times \quad 7 \\ \hline \end{array}$

**12.** $\begin{array}{r} 8445 \\ \times \quad 4 \\ \hline \end{array}$

Name _____

## Multiplying Greater Numbers (continued)

**13.**  2217
× 7

**14.**  1213
× 4

**15.**  3152
× 2

**16.**  $16.51
× 3

**17.**  2572
× 5

**18.**  $23.62
× 3

**19.**  4725
× 3

**20.**  3157
× 8

**21.**  $62.14
× 6

**22.**  $41.48
× 3

**23.**  3273
× 4

**24.**  3511
× 5

**25.** **Math Reasoning** A pair of jeans costs $23.25, and a shirt costs $15.75. How much would you spend if you bought 3 pairs of jeans and 3 shirts?  _____

**26.** A company produces small rubber balls. They produce 2,375 each week. How many balls are produced in 4 weeks?  _____

**27.** A business complex contains 6 units, each the same size. One unit has 2,315 square feet of space. Each unit includes 20 parking spaces. How many square feet is the complex?

_____

**Test Prep** Choose the correct letter for each answer.

**28.** Find 2,763 × 4.

**A** 11,052     **B** 8,842     **C** 11,252     **D** 8,052     **E** NH

**29.** A new computer costs $1,180. Bill is starting a new business and needs 3 computers and 8 desks. How much will he spend on computers?

**F** $24     **G** $3,340     **H** $3,540     **J** $9,440     **K** NH

# Estimating Products

**Example**

Estimate 28 × 6.

28 × 6 rounds to 30 × 6.

30 × 6 = 180

So, 28 × 6 is about 180.

Round to the underlined place. Estimate each product.

**1.** 7 × <u>3</u>8 = _____   **2.** 2 × <u>6</u>23 = _____   **3.** 4 × <u>3</u>87 = _____

**4.** 5 × <u>1</u>77 = _____   **5.** 8 × <u>3</u>4 = _____   **6.** 3 × <u>3</u>16 = _____

**7.** 4 × <u>5</u>32 = _____   **8.** 6 × <u>7</u>8 = _____   **9.** 9 × <u>2</u>41 = _____

**10.** 7 × <u>5</u>7 = _____   **11.** 5 × <u>9</u>1 = _____   **12.** 5 × <u>5</u>27 = _____

**13.** 3 × <u>8</u>9 = _____   **14.** 8 × <u>4</u>7 = _____   **15.** 2 × <u>8</u>04 = _____

Name _____

## Estimating Products (continued)

Round to the underlined place. Estimate each product.

**16.** 4 × 5̲07 = _____ **17.** 2 × 8̲63 = _____ **18.** 5 × 7̲22 = _____

**19.** 8 × 6̲7 = _____ **20.** 6 × 7̲92 = _____ **21.** 3 × 7̲6 = _____

**22.** 8̲25
     ×   5

**23.** 5̲89
     ×   3

**24.** 6̲41
     ×   4

**25.** 4̲7
     ×   9

**26. Algebra** What number would you multiply by
603 to equal approximately 1,800? _____

**27.** Is 200 a reasonable answer for 587 × 4? Estimate to
check.

_____

**28.** Natalie wants to buy gifts for 3 of her friends. Each gift costs
$28. Natalie has saved $100 to buy the gifts. Does she
have enough money?

_____

**Test Prep** Choose the correct letter for each answer.

**29.** Which answer is the best estimate for 8 × 532?

   **A** 4,800    **B** 480    **C** 4,000    **D** 400

**30.** The fee to attend summer camp is $320. Estimate how
much it will cost for 2 sisters to attend.

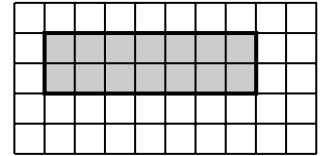   **F** $600    **G** $700    **H** $6,000    **J** $7,000

# Area

---

### Example 1

Find the area of the rectangle on the grid paper.

Each square on the grid paper is one square unit.
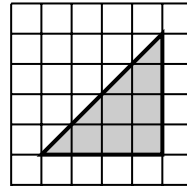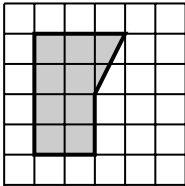The number of shaded squares is the area of the
rectangle.

Since there are 14 shaded squares, the area is 14 square units.

### Example 2

Estimate the area of each figure. Which has the largest area?

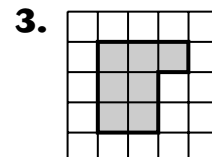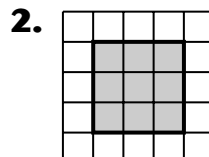Count two partly covered squares as one whole square
to estimate the area.

There are 8 whole squares and 2
partly covered squares. The area is
about 9 square units.

There are 6 whole units and
4 partly covered squares. The area
is about 8 square units.

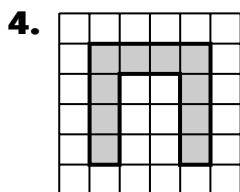The first figure has the largest area.
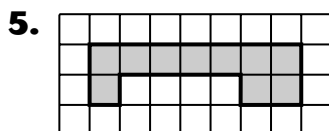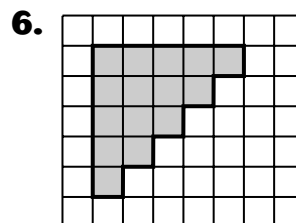
---

Find each area. Write your answer in square units.

**1.** 

**2.** 

**3.** 

_____     _____     _____

_____     _____     _____

## Area (continued)

Find each area. Write your answer in square units.

**4.**



_____

_____

**5.**



_____
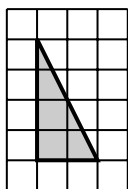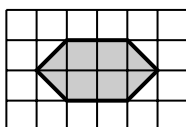
_____

**6.**



_____

_____

Judy baked several different shapes of cookies and wants to know which is largest. Each cookie was placed on a grid. Estimate the area of each cookie in Exercises 7–9.
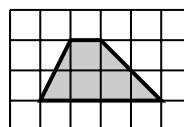
**7.** Triangle



_____

_____

**8.** Hexagon



_____

_____

**9.** Quadrilateral



_____

_____

**10.** Which cookie in Exercises 7–9 was the largest?

_____

**Test Prep** Choose the correct letter for the answer.

**11.** What is the area of this figure?

**A** 16 square units      **C** 19 square units

**B** 18 square units      **D** 20 square units

# Area

## Example 1

Find the area of the rectangle on the grid paper.

Each square on the grid paper is one square unit. The number of shaded squares is the area of the rectangle.

Since there are 14 shaded squares, the area is 14 square units.

## Example 2

Estimate the area of each figure. Which has the largest area?

Count two partly covered squares as one whole square to estimate the area.

There are 8 whole squares and 2 partly covered squares. The area is about 9 square units.

There are 6 whole units and 4 partly covered squares. The area is about 8 square units.

The first figure has the largest area.

---

Find each area. Write your answer in square units.

**1.**

**2.**

**3.**

_____

_____

_____

_____

_____

_____

## Area (continued)

Find each area. Write your answer in square units.

**4.**

**5.**

**6.**

Judy baked several different shapes of cookies and wants to know which is largest. Each cookie was placed on a grid. Estimate the area of each cookie in Exercises 7–9.

**7.** Triangle

**8.** Hexagon

**9.** Quadrilateral

**10.** Which cookie in Exercises 7–9 was the largest?

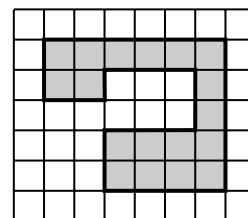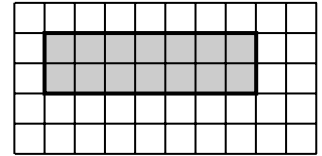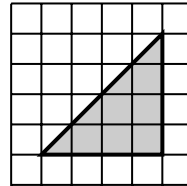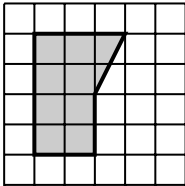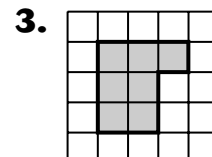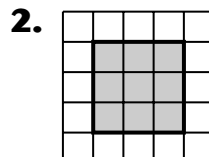**Test Prep** Choose the correct letter for the answer.

**11.** What is the area of this figure?

    **A** 16 square units     **C** 19 square units

    **B** 18 square units     **D** 20 square units

# Slides, Flips, and Turns

### Example 1

Does the diagram at the right show
a slide, flip, or turn?

Compare the position of the two figures.
The shaded figure is a reflection of the
unshaded figure across the dotted line.

So, the diagram shows a flip.
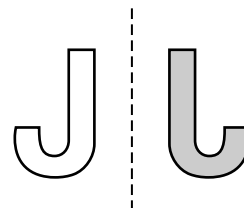
### Example 2

Does the diagram at the right show
a slide, flip, or turn?

The shaded figure has been turned around
the point. So, the diagram shows a turn.

---

Write slide, flip, or turn for each diagram.

**1.** _____

**2.** _____

**3.** _____

**4.** _____

**5.** _____

**6.** _____
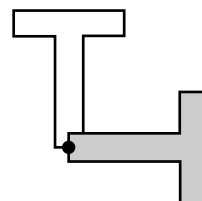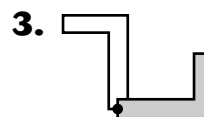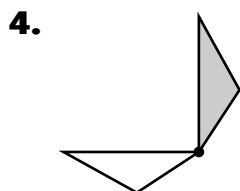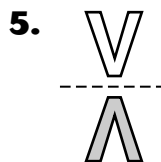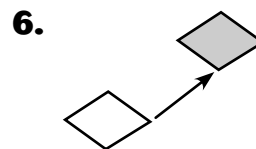
## Slides, Flips, and Turns (continued)

Write slide, flip, or turn for each diagram.

**7.**

_____

**8.**

_____

**9.**

_____

**10.**

_____

**11.**

_____

**12.**

_____
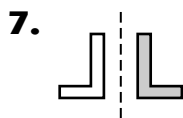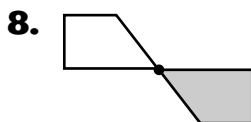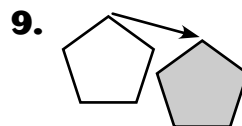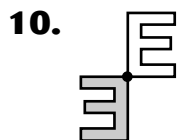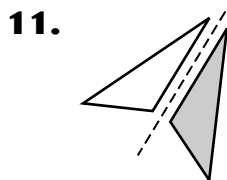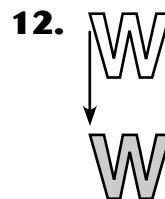
Use the figures below to answer Questions 13 and 14.

**13.** Are Figures 1 and 2
related by a slide,
a flip, or a turn?          _____

Figure 1

Figure 2

**14.** Are Figures 1 and 3
related by a slide,
a flip, or a turn?          _____

Figure 3

**Test Prep** Choose the correct letter for the answer.

**15.** Which describes how the figure
at the right was moved from A to B?

**A** Slide          **C** Turn

**B** Flip          **D** Flip then slide

A

B

# Quadrilaterals

## Example

Name the quadrilaterals.

A **parallelogram** has two pairs of parallel sides and opposite sides which are the same length.
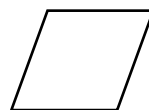
A **rhombus** has two pairs of parallel sides and all sides are the same length.
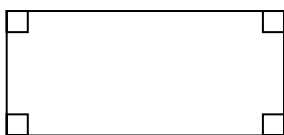
A **rectangle** has two pairs of parallel sides, opposite sides which are the same length, and 4 right angles.
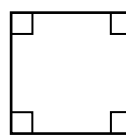
A **square** has two pairs of parallel sides, all sides the same length, and 4 right angles.

Write the name of each quadrilateral.

**1.**

**2.**

**3.**

_____

_____

_____
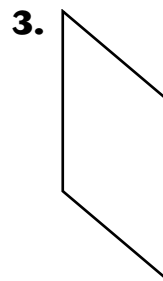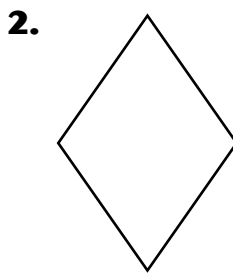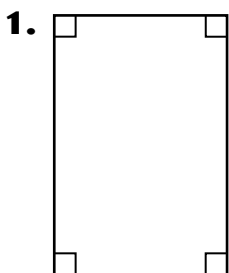
Name _____

## Quadrilaterals (continued)

Write the name of each quadrilateral.

**4.**
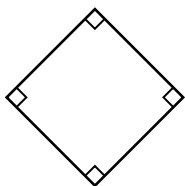
**5.**
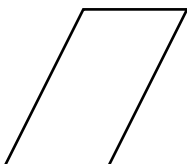
**6.**

_____    _____    _____
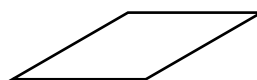
**7.** I have two pairs of parallel sides, and all
of my sides are equal, but I have no right
angles. What quadrilateral am I?

_____

**8.** I have two pairs of parallel sides and 4 right
angles, but all 4 of my sides are not equal.
What quadrilateral am I?

_____

**9.** Name all of the quadrilaterals in the
picture at the right.

_____
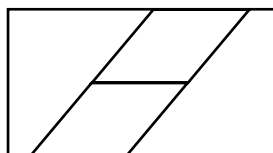
**10. Math Reasoning** Can a quadrilateral be both a rhombus
and a parallelogram? Explain your answer.

_____

_____

_____

**Test Prep** Choose the correct letter for the answer.

**11.** What is the name of this figure?
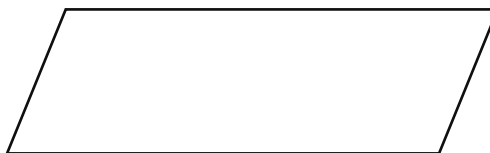
**A** Parallelogram  **B** Square     **C** Rhombus   **D** Rectangle

# Classifying Triangles Using Angles

**Example**

Name the triangles by the kinds of angles they have.
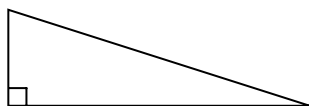
This is a **right triangle**. It has exactly one right angle.
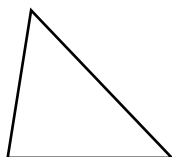
This is an **acute triangle**. It has 3 acute angles.
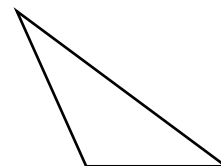
This is an **obtuse triangle**. It has exactly one obtuse angle.

Name each triangle as right, acute, or obtuse.

**1.**

_____

**2.**

_____

**3.**

_____

**4.**

_____

**5.**

_____

**6.**

_____
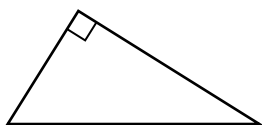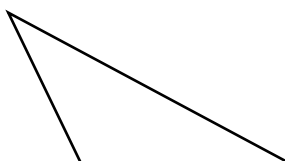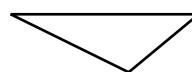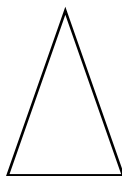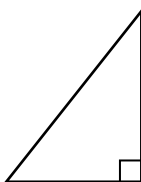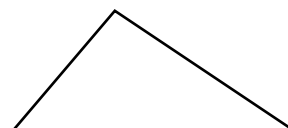
## Classifying Triangles Using Angles (continued)

Name each triangle as right, acute, or obtuse.

**7.**
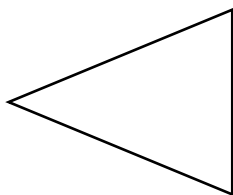
**8.**
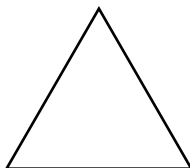
**9.**

_____    _____    _____

**10.**
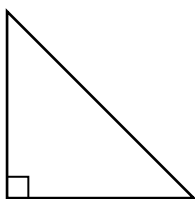
**11.**
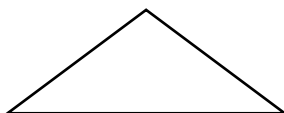
**12.**

_____    _____    _____
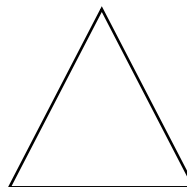
**13.** How many acute angles does an acute triangle have?    _____

**14.** How many obtuse angles does an obtuse
triangle have?

_____

**15.** How many right angles does a right triangle have?    _____

**16. Math Reasoning** How many acute angles does a
right triangle have?

_____

**Test Prep** Choose the correct letter for the answer.

**17.** Which term describes this triangle?
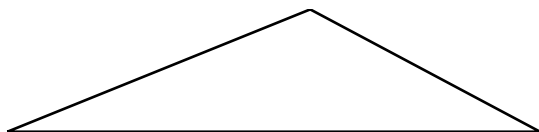
**A** Acute        **B** Right        **C** Equilateral        **D** Obtuse

# Lines, Segments, Rays, and Angles

## Example

Write *right angle*, *acute angle*, or *obtuse angle* to name each angle.
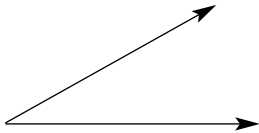
This is an acute
angle since it is
smaller than a
right angle.
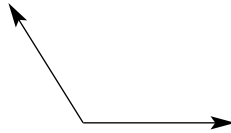
This is an obtuse
angle since it is
larger than a
right angle.
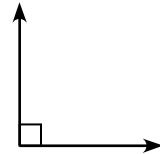
This is a right
angle since it is
exactly 90°.

Write *right angle*, *acute angle*, or *obtuse angle* to name
each angle.
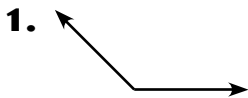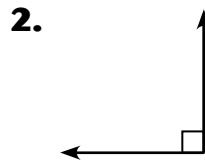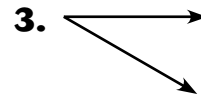
**1.**

**2.**

**3.**

What kind of angle do the hands of each clock show?

**4.**

**5.**

**6.**
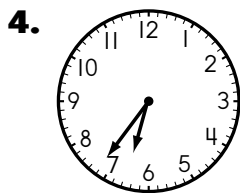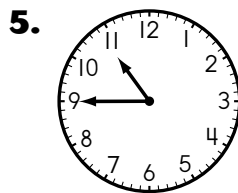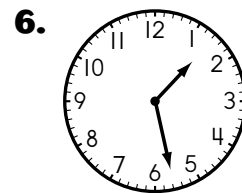
## Lines, Segments, Rays, and Angles (continued)

Write *right angle*, *acute angle*, or *obtuse angle* to name each angle.

**7.**
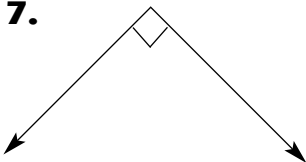
**8.**
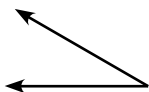
**9.**

_____         _____         _____
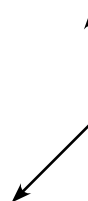
What kind of angle do the hands of each clock show?

**10.**
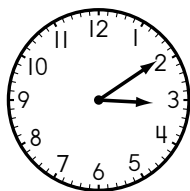
**11.**
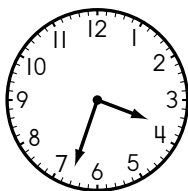
**12.**

_____         _____         _____
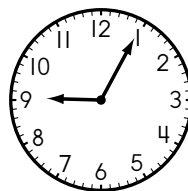
**13.** Look at the angle formed by the number 7.
What kind of angle does it form?

_____

**7**

**Test Prep** Choose the correct letter for the answer.

**14.** Classify this angle.
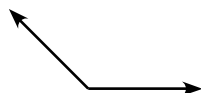
**A** Obtuse        **B** Acute        **C** Right        **D** Straight

# Dividing by 10

**Example**

Find 30 ÷ 10.

Think:  10 × ____ = 30

10 × 3 = 30

So, 30 ÷ 10 = 3.

Use the multiplication fact to find each quotient.

**1.** 10 × 5 = 50

50 ÷ 10 = _____

**2.** 10 × 2 = 20

20 ÷ 10 = _____

**3.** 10 × 1 = 10

10 ÷ 10 = _____

**4.** 10 × 3 = 30

30 ÷ 10 = _____

**5.** 10 × _____ = 40

40 ÷ 10 = _____

**6.** 10 × _____ = 60

60 ÷ 10 = _____

**7.** 10 × _____ = 100

100 ÷ 10 = _____

**8.** 10 × _____ = 70

70 ÷ 10 = _____

**9.** 10 × _____ = 80

80 ÷ 10 = _____

**10.** What multiplication sentence can you use to find 90 ÷ 10?

_____

## **Dividing by 10** (continued)

Use the multiplication fact to find each quotient.

**11.** $10 \times 2 = 20$          **12.** $10 \times 4 = 40$          **13.** $10 \times 3 = 30$

$20 \div 10 =$ _____               $40 \div 10 =$ _____               $30 \div 10 =$ _____

Find each quotient.

**14.** $10 \div 10 =$ _____     **15.** $50 \div 10 =$ _____     **16.** $90 \div 10 =$ _____

**17.** $10\overline{)20}$                **18.** $10\overline{)30}$                **19.** $10\overline{)70}$

**Algebra** Complete each table.

**20.** Rule: Divide by 10

| Input | Output |
|-------|--------|
| 30    | _____  |
| 70    | _____  |
| 80    | _____  |

**21.** Rule: Divide by 4

| Input | Output |
|-------|--------|
| 12    | _____  |
| 20    | _____  |
| 40    | _____  |

**22.** Rule: Divide by 8

| Input | Output |
|-------|--------|
| 16    | _____  |
| 24    | _____  |
| 80    | _____  |

**Test Prep** Choose the correct letter for each answer.

**23.** Jill has 60 dimes. There are 10 dimes in each dollar.
How many dollars are Jill's dimes equal to?

**A** $50          **B** $10          **C** $6          **D** $7          **E** NH

**24.** Find a related division sentence for the multiplication
sentence $10 \times 2 = 20$.

**F** $2 \times 10 = 20$   **G** $10 \div 20 = 2$   **H** $20 \div 10 = 2$   **J** $20 \div 4 = 5$   **K** NH

# Input/Output Tables

## Example 1

Complete the table.
Rule: Subtract 3.

| Input | Output |
|-------|--------|
| 5     |        |
| 7     | 4      |
| 9     |        |
| 11    | 8      |

$5 - 3 = 2$

$9 - 3 = 6$

The missing outputs are 2 and 6.

## Example 2

Write the rule.
Then complete the table.

| Input | Output |
|-------|--------|
| 5     | 25     |
| 4     | 20     |
| 3     |        |
| 2     |        |

The rule is multiply by 5.

$3 \times 5 = 15$
$2 \times 5 = 10$

The missing outputs are 15 and 10.

Complete each table.

**1.** Rule: Add 7.

| Input | Output |
|-------|--------|
| 18    | 25     |
| 15    |        |
| 12    | 19     |
| 9     |        |

**2.** Rule: Multiply by 4.

| Input | Output |
|-------|--------|
| 3     |        |
| 5     | 20     |
|       | 28     |
| 9     |        |

**3.** Rule: Multiply by 2.

| Input | Output |
|-------|--------|
| 6     |        |
|       | 6      |
|       | 2      |
| 0     | 0      |

Write the rule. Then complete the table.

**4.** Rule: _____

_____

| Input | Output |
|-------|--------|
| 4     |        |
| 7     | 6      |
|       | 8      |
| 12    | 11     |

**5.** Rule: _____

_____

| Input | Output |
|-------|--------|
| 0     |        |
|       | 19     |
| 15    | 24     |
| 20    | 29     |

**6.** Rule: _____

_____

| Input | Output |
|-------|--------|
| 3     | 18     |
| 4     | 24     |
| 7     |        |
| 8     |        |

## Input/Output Tables (continued)

Complete each table.

**7.** Rule: Add 5.

| Input | Output |
|-------|--------|
| 6 | |
| 8 | |
| | 14 |
| 12 | |

**8.** Rule: Multiply by 8.

| Input | Output |
|-------|--------|
| 1 | |
| 3 | |
| | 40 |
| 7 | |

**9.** Rule: Add 12.

| Input | Output |
|-------|--------|
| 6 | |
| 14 | |
| 22 | |
| 35 | |

Write the rule. Then complete the table.

**10.** Rule: ‗‗‗‗‗‗‗‗‗‗‗‗ ‗‗‗‗‗‗‗‗‗‗‗‗

| Input | Output |
|-------|--------|
| 8 | 4 |
| | 12 |
| 21 | |
| 26 | 22 |
| 31 | |

**11.** Rule: ‗‗‗‗‗‗‗‗‗‗‗‗ ‗‗‗‗‗‗‗‗‗‗‗‗

| Input | Output |
|-------|--------|
| 2 | 6 |
| 4 | 12 |
| 6 | 18 |
| 7 | |
| 9 | |

**12.** Rule: ‗‗‗‗‗‗‗‗‗‗‗‗ ‗‗‗‗‗‗‗‗‗‗‗‗

| Input | Output |
|-------|--------|
| 20 | 13 |
| 17 | 10 |
| 14 | |
| | 4 |
| 7 | |

**13.** The rule for a table is multiply by 1. If an input is 9, what is the output?

‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗

**Test Prep** Choose the correct letter for each answer.

**14.** Which number completes the table?

| Input | Output |
|-------|--------|
| 3 | 27 |
| 5 | 45 |
| 6 | |
| 8 | 72 |

**A** 63
**B** 36
**C** 54
**D** 58

**15.** What is the rule for the table?

| Input | Output |
|-------|--------|
| 3 | 12 |
| 7 | 16 |
| 11 | 20 |
| 16 | 25 |

**F** Subtract 9.
**G** Multiply by 3.
**H** Add 9.
**J** Add 8.

# Symmetry

### Example

You can trace, cut out, and fold the shapes if you want to.

Circle each figure that has matching parts.

**1.**

**2.**

**3.**
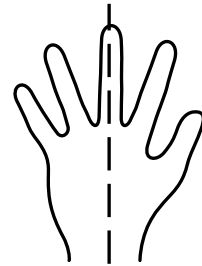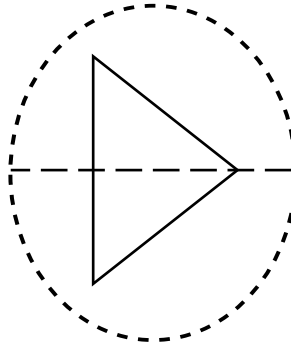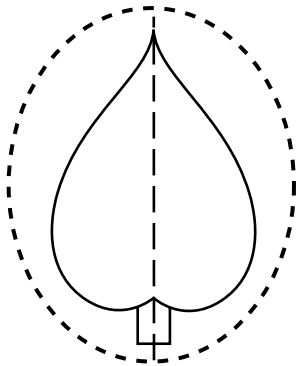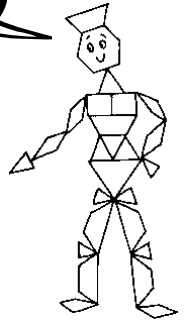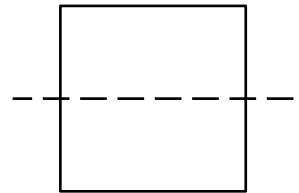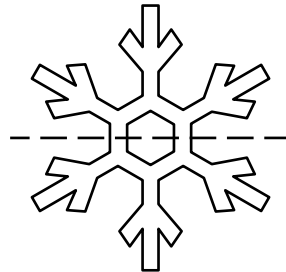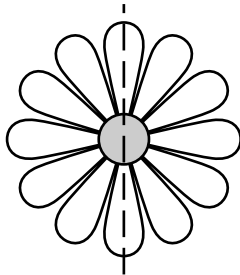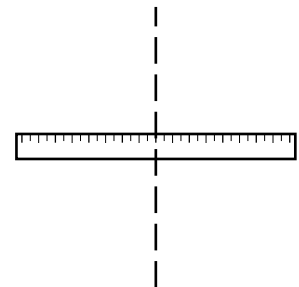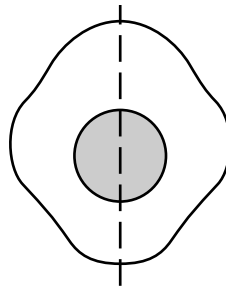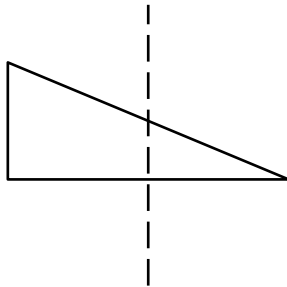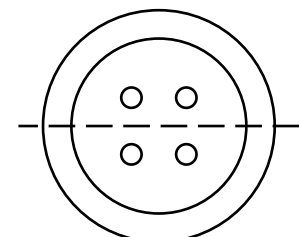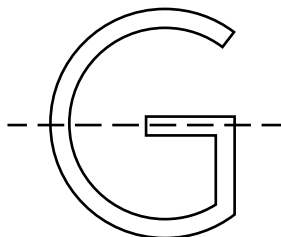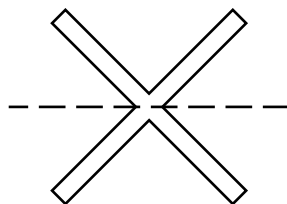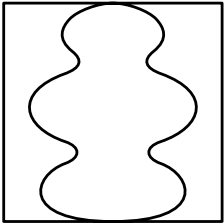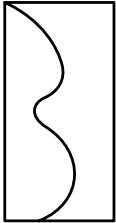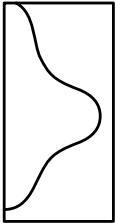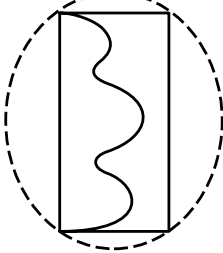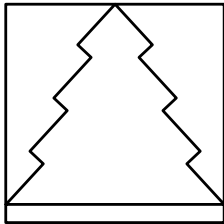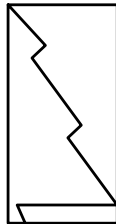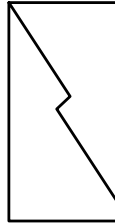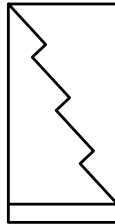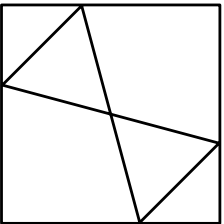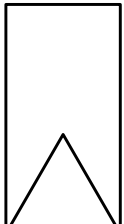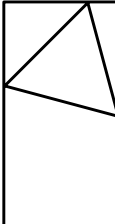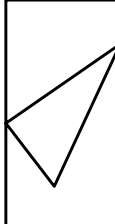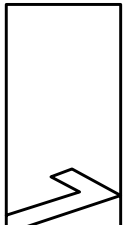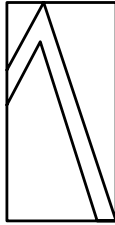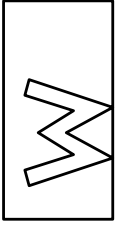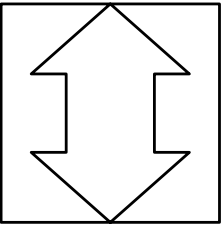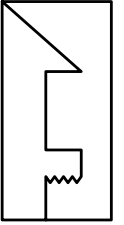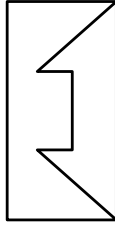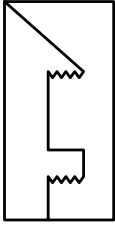
## Symmetry (continued)

Circle the half of the card that shows one of the matching parts.

**4.**

**5.**

**6.**

**7.**

**8.**

# Congruent Figures

The 2 triangles are NOT the same shape.

The 2 triangles are NOT the same size.

The 2 triangles are the same size and shape.

## Example

Circle the figure that has the same size and shape.

**1.**

**2.**

**3.**
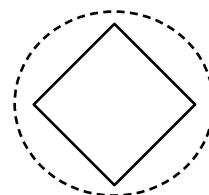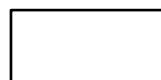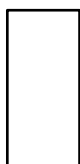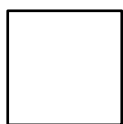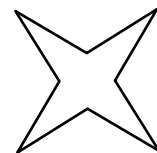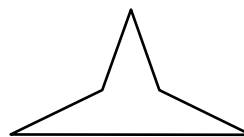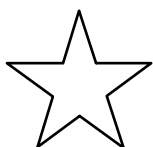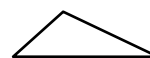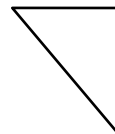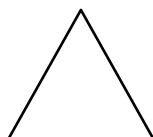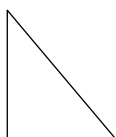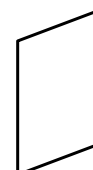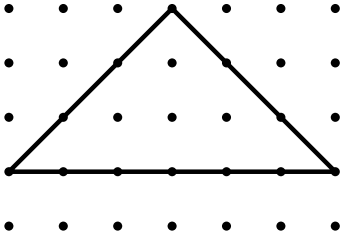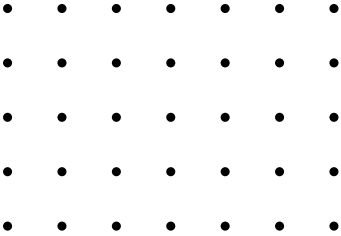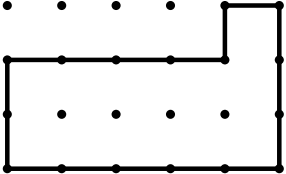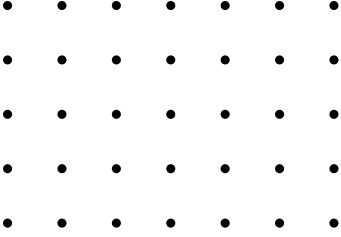
## Congruent Figures (continued)
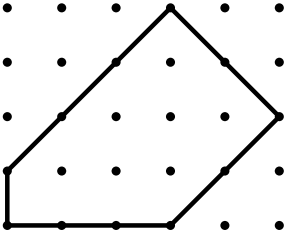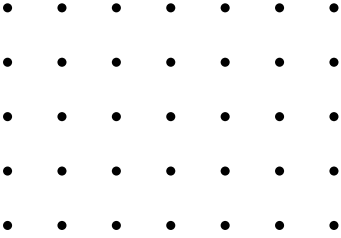
Draw a figure that is the same size and shape.
Write the number of corners and sides.

**4.**

_____ corners

_____ sides
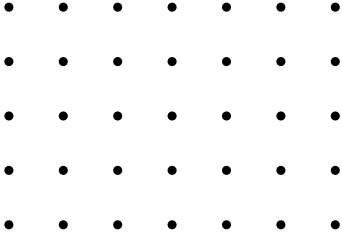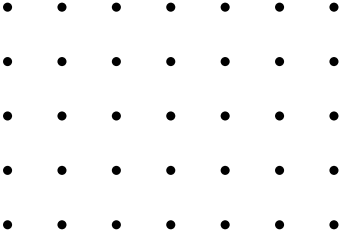
**5.**

_____ corners

_____ sides

**6.**

_____ corners

_____ sides

**7.** Draw your own figure. Then draw one that is the same size and shape.

_____ corners

_____ sides

Name _____

# Adding and Subtracting with Like Denominators

Add or subtract. Write each number in simplest form.

**1.** $\dfrac{12}{19}$
$+ \ \dfrac{4}{19}$

**2.** $\dfrac{17}{30}$
$- \ \dfrac{7}{30}$

**3.** $\dfrac{7}{12}$
$+ \ \dfrac{5}{12}$

**4.** $\dfrac{7}{8}$
$- \ \dfrac{1}{8}$

**5.** $\dfrac{8}{9}$
$- \ \dfrac{2}{9}$

**6.** $\dfrac{5}{7}$
$+ \ \dfrac{4}{7}$

**7.** $\dfrac{13}{25}$
$- \ \dfrac{8}{25}$

**8.** $\dfrac{7}{16}$
$+ \ \dfrac{9}{16}$

**9.** $9\dfrac{1}{10}$
$+ \ 3\dfrac{6}{10}$

**10.** $7\dfrac{3}{16}$
$- \ 2\dfrac{8}{16}$

**11.** $2\dfrac{5}{12}$
$+ \ 1\dfrac{11}{12}$

**12.** $3\dfrac{1}{4}$
$- \ 1\dfrac{3}{4}$

**13.** $4\dfrac{1}{5}$
$- \ 3\dfrac{3}{5}$

**14.** $14\dfrac{9}{10}$
$+ \ 10\dfrac{4}{10}$

**15.** $9$
$- \ 7\dfrac{8}{11}$

**16.** $22\dfrac{7}{12}$
$- \ 15\dfrac{8}{12}$

**17.** Brooke walked $1\dfrac{4}{9}$ miles to the library to return some books. She then walked another $\dfrac{7}{9}$ mile to her grandmother's house. How far did Brooke walk altogether?

_____

**Test Prep**   Circle the correct letter for the answer.

**18.** Julio is riding his bicycle to Anna's house $5\dfrac{1}{8}$ miles away. He has $1\dfrac{5}{8}$ miles left to go. How many miles has Julio biked so far?

**A** $3\dfrac{5}{8}$     **B** $3\dfrac{1}{4}$     **C** $4\dfrac{1}{8}$     **D** $3\dfrac{1}{2}$

Name _____

**Problem-Solving Strategy**
# Make a Graph

Use the data in the tables and read the questions. Decide what kind of
graph can be used to solve each problem. Then make a graph for each on a
separate sheet of paper to help find the answers.

| Year | T-shirt price | Sweatshirt price |
|------|---------------|------------------|
| 1995 | $4.50 | $8.50 |
| 1996 | $5.00 | $10.00 |
| 1997 | $5.00 | $11.00 |
| 1998 | $6.00 | $12.00 |
| 1999 | $7.00 | $15.00 |

| Month | PTA Meeting attendance |
|-------|------------------------|
| September | 254 |
| October | 263 |
| November | 182 |
| December | 61 |
| January | 142 |
| February | 157 |
| March | 168 |
| April | 103 |
| May | 85 |

| Week | Combo salads sold |
|------|-------------------|
| Week 1 | 12 |
| Week 2 | 27 |
| Week 3 | 32 |
| Week 4 | 37 |
| Week 5 | 46 |

**1.** Between which 2 consecutive years did the price
of sweatshirts increase the most?

_____

**2.** In which year was the difference between the
price of a T-shirt and the price of a sweatshirt the
greatest?

_____

**3.** The PTA is considering having fewer meetings
next year. Based on the attendance, in which two
months would you recommend that they not hold
PTA meetings?

_____

**4.** During which part of the year is interest in PTA
meetings the greatest?

_____

**5.** Between which 2 consecutive weeks did sales of
combo salads increase the most?

_____

**6.** Predict the number of combo salads that might
be sold in Week 6. Explain your prediction.

_____

_____

_____

_____

_____

_____

# Comparing and Ordering Decimals

Write the numbers in each set in order from least to greatest.

**1.** 0.15, 0.97, 0.01

_____

**2.** 3.09, 3.29, 3.19

_____

**3.** 1.03, 2.53, 0.253

_____

**4.** 0.047, 0.04, 0.40

_____

**5.** 5,466; 4,566; 4,566.6

_____

**6.** 0.01, 0.001, 0.011

_____

**7.** Help the biker make it through the obstacle course.
Trace his route. The numbers must decrease along the way.

| 0.6 | 0.8 | | | 0.029 | 0.0295 | |
| 0.712 | 0.4 | | | 0.028 | | |
| 0.41 | 0.38 | 0.9 | 0.03 | 0.041 | 0.010 | 0.100 |
| 0.399 | 0.377 | 0.5 | 0.0392 | 0.040 | 0.005 | 0.001 |
| | 0.379 | 0.2 | 0.39 | 0.06 | 0.05 | 0.051 |
| | | 0.387 | 0.37 | 0.041 | 0.015 | 0.3 |

**Test Prep** Circle the correct letter for the answer.

**8.** Terry ran a mile in 7.69 minutes. Juan ran a mile in 7.09 minutes. Morgan finished in 7.089 minutes and Lee took 7.801 minutes. Who ran the fastest mile?

**A** Terry      **B** Juan      **C** Morgan      **D** Lee

Name _____

# Congruent Figures and Transformations

Choose the figure that is congruent to the first figure in each row.
Tell what transformation is illustrated. Write **slide**, **flip**, or **turn**.
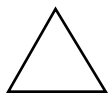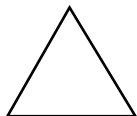
**1.**     **a.**     **b.**     **c.**        _____
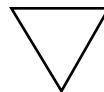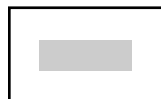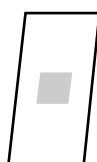
**2.**     **a.**     **b.**     **c.**        _____
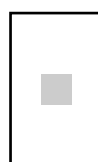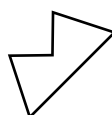
**3.**     **a.**     **b.**     **c.**        _____
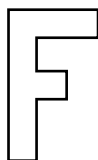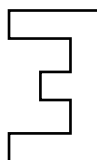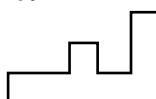
**4.**     **a.**     **b.**     **c.**        _____
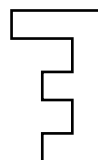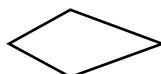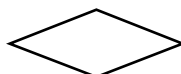
**5.**     **a.**     **b.**     **c.**        _____
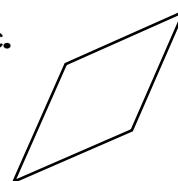
**Test Prep** Circle the correct letter for each answer.

Tell how each figure was moved from position A to position B.

**6.**
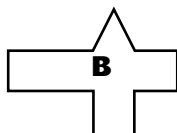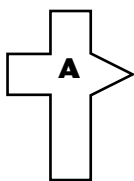
    **A** turn and slide     **C** flip and slide

    **B** turn     **D** flip and turn

**7.**
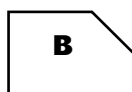
    **F** turn and slide     **H** slide and flip

    **G** flip     **J** flip and turn

Name _____

# Geometric Ideas

Draw and label an example of each.

**1.** line *FG*　　　　　　　　**2.** line segment *FG*　　　　　**3.** ray *FG*

**4.** $\overline{MN}$ is parallel to $\overline{PQ}$　　　　　　**5.** $\overleftrightarrow{RS}$ is perpendicular to $\overrightarrow{UV}$

**6.** $\overrightarrow{GH}$ intersects $\overline{AB}$ at point *D*　　　　**7.** $\overleftrightarrow{RS}$ intersects $\overrightarrow{MN}$ at point *F*

Use the drawing at the right for Exercises 8–10.

**8.** Name 7 different line segments using points *A, X, T, y,* and *Z.*

_____

_____
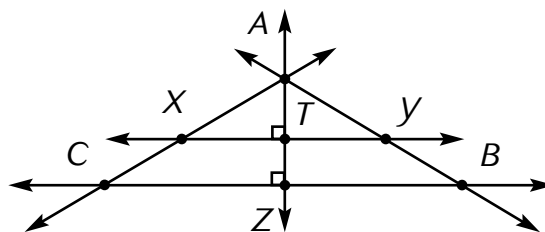
**9.** Name 3 different rays starting from point *T.*

_____

**10.** Name two pairs of perpendicular lines.

_____

**Test Prep** Circle the correct letter for the answer.

**11.** Which of the following describes this drawing?

　**A** $\overrightarrow{GH}$ intersects $\overrightarrow{AB}$ at *D*　　**C** $\overleftrightarrow{GD}$ intersects *DH* at *D*

　**B** $\overline{GH}$ intersects $\overline{AB}$ at *D*　　**D** $\overrightarrow{GD}$ intersects $\overrightarrow{DH}$ at *D*

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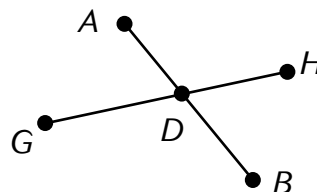
Name _____

# Subtracting Fractions and Mixed Numbers: Like Denominators

Subtract. Write each answer in simplest form.

**1.** $\dfrac{5}{9} - \dfrac{3}{9}$

_____

**2.** $\dfrac{4}{6} - \dfrac{2}{6}$

_____

**3.** $\dfrac{7}{8} - \dfrac{6}{8}$

_____

**4.** $1\dfrac{4}{5} - 1$

_____

**5.** $\dfrac{9}{10} - \dfrac{5}{10}$

_____

**6.** $3\dfrac{1}{8} - 2\dfrac{3}{8}$

_____

**7.** $2\dfrac{1}{3} - 1\dfrac{2}{3}$

_____

**8.** $\dfrac{3}{9} - \dfrac{2}{9}$

_____

**9.** $\dfrac{6}{10} - \dfrac{1}{10}$

_____

**10.** $2\dfrac{4}{8} - \dfrac{6}{8}$

_____

**11.** $5\dfrac{1}{4} - \dfrac{3}{4}$

_____

**12.** $5\dfrac{1}{8} - 2\dfrac{5}{8}$

_____

**13.**
$$\begin{array}{r} \frac{2}{5} \\ -\frac{1}{5} \\ \hline \end{array}$$

**14.**
$$\begin{array}{r} 3\frac{4}{10} \\ -\frac{7}{10} \\ \hline \end{array}$$

**15.**
$$\begin{array}{r} 4\frac{7}{12} \\ -\frac{7}{12} \\ \hline \end{array}$$

**16.**
$$\begin{array}{r} \frac{4}{12} \\ -\frac{3}{12} \\ \hline \end{array}$$

**17.** Jenna had $\dfrac{7}{12}$ of a dozen eggs in the refrigerator.
She used $\dfrac{5}{12}$ of a dozen eggs for a recipe. How many
eggs were left after she used the eggs for her recipe?      _____

**Test Prep** Circle the correct letter for each answer.

**18.** After a class picnic, Mitchica wrapped up $4\dfrac{2}{8}$ leftover pizzas. For dinner, she
and her brother ate $1\dfrac{6}{8}$ pizza. How many pizzas were left after their dinner?

**A** $3\dfrac{1}{8}$          **B** $1\dfrac{6}{8}$          **C** $2\dfrac{1}{2}$          **D** $3\dfrac{1}{2}$

**19.** Alma's bakery made $6\dfrac{6}{12}$ dozen blueberry muffins. They spread frosting on $3\dfrac{9}{12}$
dozen. How many muffins were not frosted?

**F** $3\dfrac{3}{4}$ dozen          **G** $3\dfrac{1}{2}$ dozen          **H** $2\dfrac{1}{2}$ dozen          **J** $2\dfrac{3}{4}$ dozen

# Relating Fractions and Decimals

Write a fraction and a decimal for each shaded part.

**1.**

_____

**2.**

_____

**3.**

_____

**4.**

_____

**5.**

_____

**6.**

_____
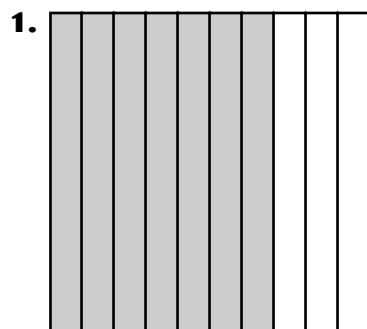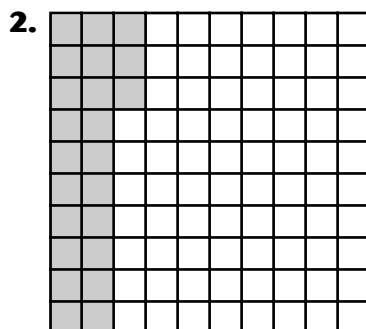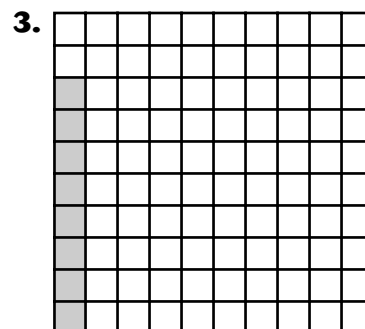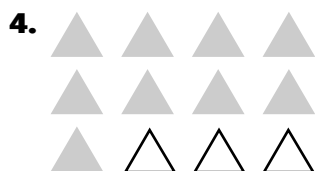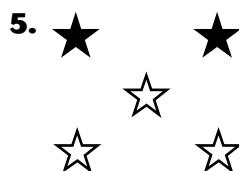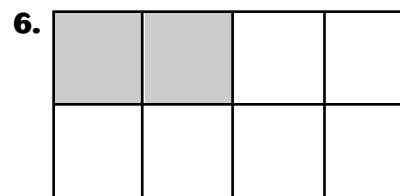
Write the following as a fraction and as a decimal.

**7.** 15 hundreths   _____

**8.** 8 tenths   _____

**9.** 20 hundreths   _____

**10.** 79 hundreths   _____

**11.**

_____

**Test Prep**  Circle the correct letter for each answer.

**12.** There are 7 posters for the Talent Show. Five posters are on yellow poster board. The others are on white. What fraction of the posters are on white?

**A** $\frac{7}{2}$          **B** $\frac{2}{7}$          **C** $\frac{7}{5}$          **D** $\frac{2}{5}$

**13.** Sixty-five of the 100 chorus members are girls. Which is the decimal describing the part of the chorus made up of girls?

**F** 1.65          **G** 0.135          **H** 0.35          **J** 0.65

Name _____

# Estimating Quotients

What did the multiplication problem say to the division problem? To find the
answer, use compatible numbers to estimate. Write your answer on the blank.
Copy the letter printed next to your answer above each matching estimate below.

**1.** $5\overline{)296}$  **H** _____

**2.** $4\overline{)150}$  **I** _____

**3.** $5\overline{)244}$  **V** _____

**4.** $9\overline{)719}$  **S** _____

**5.** $2\overline{)138}$  **M** _____

**6.** $3\overline{)103}$  **R** _____

**7.** $3\overline{)894}$  **N** _____

**8.** $8\overline{)718}$  **A** _____

**9.** $58\overline{)6,120}$ **W** _____

**10.** $22\overline{)7,878}$ **D** _____

**11.** $51\overline{)999}$  **E** _____

**12.** $43\overline{)8,118}$ **O** _____

___ ___   ___ ___ ___ ___   ___ ___
100  20    60  90  50  20    300 200

___ ___ ___ ___ ___ ___ ___ ___ ___ ___**!**
30  20  70  90  40  300 400 20  30  80

**13. Math Reasoning** Give three different sets of compatible numbers you could use to
estimate the quotient of 495 ÷ 83.

_____

_____

# Mental Math: Patterns in Division

What has four wheels and flies? Use basic facts and patterns to find each quotient. Then use the decoder to answer the riddle. The answer blank numbers match the exercise numbers. Write the letter that matches the quotient for that exercise on the blank.

**1.** 200 ÷ 10 = _____    **2.** 2,000 ÷ 10 = _____    **3.** 20,000 ÷ 10 = _____

**4.** 25 ÷ 5 = _____    **5.** 250 ÷ 5 = _____    **6.** 2,500 ÷ 5 = _____

**7.** 42 ÷ 7 = _____    **8.** 420 ÷ 7 = _____    **9.** 4,200 ÷ 7 = _____

**10.** 42,000 ÷ 7 = _____    **11.** 810 ÷ 9 = _____    **12.** 8,100 ÷ 9 = _____

| ____ | ____ | ____ | ____ | ____ | ____ | ____ | ____ | | ____ | ____ | ____ | ____ | ____ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 4 | 3 | 6 | 1 | 12 | 9 | | 11 | 7 | 8 | 5 | 10 |

| 900 | 2,000 | 600 | 60 | 200 | 500 |
|---|---|---|---|---|---|
| G | R | E | U | G | B |

| 6 | 50 | 6,000 | 5 | 90 | 20 |
|---|---|---|---|---|---|
| R | C | K | A | T | A |

**13. Math Reasoning** How is the number of zeros in the quotient of 420 ÷ 7 = 60 related to the number of zeros in the dividend?

_____

_____

**Test Prep** Circle the correct letter for each answer.

**14.** 350 ÷ 7 =           **15.** 5,600 ÷ 8 =

   **A** 50              **F** 7,000

   **B** 5              **G** 70

   **C** 500              **H** 700

   **D** 5,000              **J** 7

Name _____

# Multiplying Greater Numbers

**1.**   745
      × 853

**2.**   894
      × 129

**3.**   479
      × 392

**4.**   872
      × 396

**5.**   517
      × 312

**6.**   721
      × 612

**7.**   455
      ×$3.14

**8.**   640
      × 126

**9.**   815
      × 325

**10.**   689
       × 212

**11.**   513
       × 378

**12.**   888
       × 987

**Test Prep**   Circle the correct letter for each answer.

**13.** Scrub-A-Pup charges $24.49 to wash and groom dogs weighing more than 60 pounds. During the last seven days, they washed and groomed 132 large dogs. How much money did the store take in?

   **A** $1,469.40       **B** $792.00       **C** $3,232.68       **D** $7,920.00

**14.** Scrub-A-Pup has a small dog special. On weekdays, dogs under 20 pounds are washed and groomed for $19.49. Last week they washed and groomed 112 small dogs. How much money did the store earn?

   **F** $584.70       **G** $2,240.00       **H** $5,487.00       **J** $2,182.88

Name _____

# Multiply Two Digit Whole Numbers

1. 24 I
× 27

2. 14 N
× 24

3. 45 R
× 16

4. 96 S
× 11

5. 55 O
× 14

6. 51 A
× 33

7. 42 T
× 43

8. 98 S
× 37

9. 31 I
× 27

10. 88 R
× 54

11. 96 E
× 55

12. 42 U
× 36

13. 37 M
× 49

14. 78 B
× 23

15. 51 L
× 19

16. 49 y
× 22

Match the products in Exercises 1 – 16
to the numbers below the blanks and
write the appropriate letter on the blank.

You are my brother, but I am not your brother. Who am I?
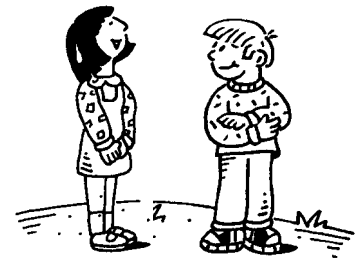
_____ _____ _____ _____    _____ _____ _____ _____ _____ _____
1,078  770  1,512 4,752   1,056  648  3,626 1,806 5,280  720

**Test Prep**  Circle the correct letter for each answer.

17. Southbank School recycles about 37 pounds of paper each week. How many pounds
will they recycle in 43 weeks?

**A** 1,410 pounds     **B** 430 pounds     **C** 1,591 pounds     **D** 148 pounds

18. Southbank School earns $1.19 for each 100 pounds of paper they recycle. Last year
they recycled about 17,000 pounds of paper. How much did they earn for their
recycling efforts?

**F** $20,230        **G** $202.30        **H** $833        **J** $119

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Name _____

# Estimating Products

Estimate each product. Round to the greatest place.

| | | | |
|---|---|---|---|
| **1.** $\begin{array}{r} 21 \\ \times\ \ 3 \\ \hline \end{array}$ | **2.** $\begin{array}{r} 68 \\ \times\ \ 7 \\ \hline \end{array}$ | **3.** $\begin{array}{r} 19 \\ \times\ \ 5 \\ \hline \end{array}$ | **4.** $\begin{array}{r} 84 \\ \times\ \ 6 \\ \hline \end{array}$ |
| **5.** $\begin{array}{r} 59 \\ \times\ 41 \\ \hline \end{array}$ | **6.** $\begin{array}{r} 72 \\ \times\ 62 \\ \hline \end{array}$ | **7.** $\begin{array}{r} 83 \\ \times\ 28 \\ \hline \end{array}$ | **8.** $\begin{array}{r} 16 \\ \times\ 19 \\ \hline \end{array}$ |
| **9.** $\begin{array}{r} 927 \\ \times\ \ \ 4 \\ \hline \end{array}$ | **10.** $\begin{array}{r} 645 \\ \times\ \ \ 7 \\ \hline \end{array}$ | **11.** $\begin{array}{r} 421 \\ \times\ \ 19 \\ \hline \end{array}$ | **12.** $\begin{array}{r} 452 \\ \times\ \ 35 \\ \hline \end{array}$ |

**13.** $6 \times 58$

**14.** $4 \times 96$

**15.** $17 \times 34$

**16.** $93 \times 82$

_____

_____

_____

_____

**17.** $141 \times 8$

**18.** $3 \times 285$

**19.** $33 \times 192$

**20.** $77 \times 506$

_____

_____

_____

_____

**21.** $45 \times 96$

**22.** $18 \times 89$

**23.** $19 \times 9$

**24.** $23 \times 11$

_____

_____

_____

_____

**Test Prep** Circle the correct letter for each answer.

**25.** In which of the following is an exact answer more useful than an estimate?

    **A** counting change for a purchase

    **C** predicting the number of people in the park on a given day

    **B** the number of jelly beans in a jar for a contest

    **D** describing the number of geese in a flock

**26.** In which of the following is an estimate more useful than an exact answer?

    **F** number of presidents of the United States

    **H** time it takes to travel from home to grandmother's house

    **G** teaspoons of salt in a recipe

    **J** amount of medicine in a dose

Name _____

**Problem-Solving Strategy**
# Make a Graph

On a separate sheet of paper, make an appropriate graph to represent the data in the table below. Then use your graph to solve Exercises 1–6.

| Our Class's Favorite Sport | | |
|---|---|---|
| **Sport** | **To Play** | **To Watch on TV** |
| Baseball | 21 | 18 |
| Football | 8 | 27 |
| Ice-Skating | 15 | 25 |
| Running | 25 | 6 |
| Basketball | 30 | 29 |

**1.** What will you use for the vertical axis? the horizontal axis?

_____

**2.** What intervals will you use? _____

_____

**3.** Which type of graph did you choose? Why?

_____

_____

**4.** Which sports are much more popular to watch than to play?

Tell how you know from the graph. _____

_____

**5.** Which sport is about equally popular to watch and to play?

Tell how you know from the graph. _____

_____

**6.** Which sport is about 4 times more popular to play than to watch?

_____

Name _____

# Comparing and Ordering Whole Numbers and Decimals

Write the numbers in order from least to greatest.

**1.** 2,000,000; 20,000,000; 12,000,000

_____

**2.** 723,219; 723,319; 7,323,119

_____

**3.** 44.882; 44.812; 44.810

_____

**4.** 87.59; 875.9; 8.759

_____

**5.** 76,844; 76,844.10; 76,844.101

_____

**6.** 4,513.91; 4,313.91; 4,531.991

_____

**7.** 1,335.803; 1,305.803; 1,305.830

_____

**8.** 73.121; 73.212; 73.211

_____

**9.** Each square contains a number from Exercises 1–8.

Shade each square that contains the least number in that exercise. The remaining squares will spell out the name of a planet with a 29-day year.

| 1 12,000,000 S | 2 723,219 M | 3 44.882 A | 4 87.59 T |
|---|---|---|---|

| 5 76,844.101 U | 6 4,513.91 R | 7 1,335.803 N | 8 73.121 H |
|---|---|---|---|

**Test Prep**  Choose the correct letter for each answer.

**10.** 1,216,506 ◯ 216,506

**A** >          **B** <          **C** =

**11.** 4.37 ◯ 4.73

**F** >          **G** <          **H** =

# Place Value Through Thousandths

Write each number in standard form.

**1.** three and eighteen hundredths

_____

**2.** four and two hundred three thousandths

_____

**3.** thirty-eight thousandths

_____

**4.** one hundred seventy-seven thousandths

_____

**5.** three and twenty-four hundredths

_____

**6.** sixty and sixty-one thousandths

_____

Write the word name for each decimal.

**7.** 7.45  _____

**8.** 0.061  _____

**9.** 9.04  _____

**10.** 21.046  _____

**11.** 7.743  _____

**12.** 0.045  _____

Draw a line from the clue to the decimal.

**13.** I have a 3 in my hundredths place. I am less than 1.          1.739

**14.** I am greater than 2. All of my digits are odd.          0.138

**15.** I am less than 2. I have a 9 in my thousandths place.          1.234

**16.** I am more than 1. My digits increase from left to right.          3.513

**Test Prep**  Circle the correct letter for each answer.

**17.** What is the value of the underlined digit? 2.3<u>4</u>8

**A** hundreds          **C** tens

**B** tenths          **D** hundredths

**18.** What digit is in the thousandths place? 1,432.789

**F** 4          **H** 2

**G** 9          **J** 8

**Problem-Solving Application**
# Ways to Represent Data

Use the table or bar graph below. Explain which you used and why.

| Miles Jogged One Week | |
|---|---|
| Mike | 6 |
| Elena | 3 |
| Diego | $7\frac{1}{2}$ |
| Suzanne | 9 |
| Diana | 3 |
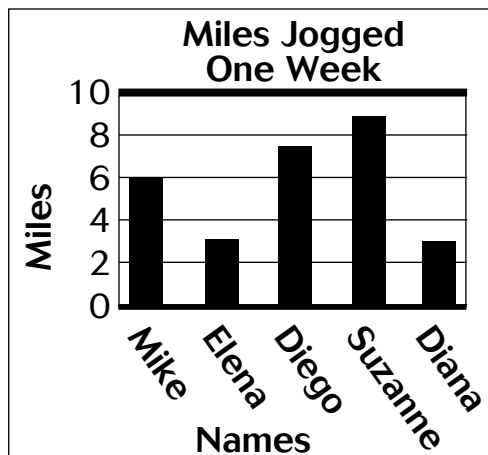
**1.** Who jogged the farthest? _____

_____

**2.** How many students jogged at least four miles?

_____

_____

**3.** Which two students combined jogged the same distance as Mike?

_____

_____

**4.** What is the mode of this set of data?

_____

_____

**5.** What is the range of the miles jogged?

_____

_____

# Fractions, Decimals and the Number Line

Show each number on a number line. Then order the numbers from least to greatest.

```
        0        0.5       1.0       1.5       2.0       2.5       3.0
    ←──┼────────┼─────────┼─────────┼─────────┼─────────┼─────────┼──→
        0        ½         1         1½        2         2½        3
```
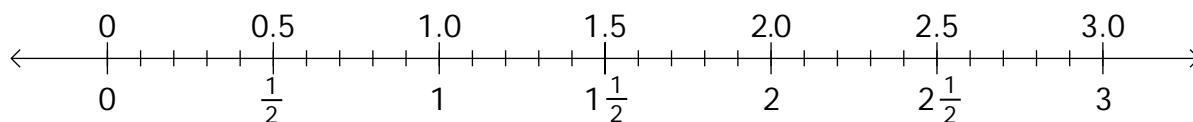
**1.** $\frac{3}{10}$, $2\frac{3}{4}$, 2.8, 1.7  _____

What point shows the location of each number?

```
                           A                    B                   C
        0        0.5       1.0       1.5        2.0      2.5        3.0
    ←──┼────────┼────●────┼─────────┼─────────●─────────┼────●──┼──→
        0        ½         1         1½        2         2½        3
```
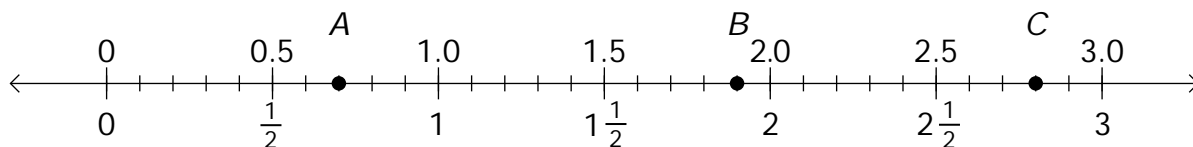
**2.** 1.9                 **3.** $\frac{7}{10}$                **4.** $2\frac{8}{10}$


_____                  _____                   _____


Use the table at the right for Exercises 5–6.

**5.** Verna grew tomatoes from seed. After several weeks, she measured the height of each seedling. Which seedling is the tallest?

| Plant Heights | |
|---|---|
| Seedling 1 | $2\frac{3}{4}$ inches |
| Seedling 2 | $3\frac{6}{10}$ inches |
| Seedling 3 | 2.8 inches |
| Seedling 4 | 3.4 inches |

_____

**6.** Which seedling is the shortest?


_____

**Test Prep**  Circle the correct letter for each answer.

**7.** Which number is less than $3\frac{1}{2}$?

   **A** 3.7          **B** 3.6          **C** 3.5          **D** 3.4

**8.** Which number is more than 4.9?

   **F** $4\frac{7}{10}$          **G** $4\frac{8}{10}$          **H** $4\frac{9}{10}$          **J** 5

# Comparing and Ordering Decimals

Compare. Write $>$, $<$, or $=$ for each $\bigcirc$.

**1.** 0.7 $\bigcirc$ 0.9  **2.** 5.8 $\bigcirc$ 5.7  **3.** 3.04 $\bigcirc$ 3.40

**4.** 9.23 $\bigcirc$ 92.3  **5.** 0.4 $\bigcirc$ 0.40  **6.** 2.0 $\bigcirc$ 1.79

**7.** 6.34 $\bigcirc$ 6.35  **8.** 4.02 $\bigcirc$ 4.0  **9.** 0.57 $\bigcirc$ 0.5

Order each set of numbers from greatest to least.

**10.** 4.2, 2.3, 3.7  **11.** 0.3, 1.20, 0.61

_____  _____

**12.** 15.2, 12.65, 1.52  **13.** 230.72, 230.87, 231.78

_____  _____

**14.** 0.4, 1.02, 0.71  **15.** 12.3, 2.31, 1.23

_____  _____

**16.** It took Don 15.48 minutes to eat his lunch. It took
Tina 15.50 minutes. Who ate lunch faster? Explain.

_____

**Math Reasoning** Order each set of numbers from least to greatest.

**17.** $\frac{3}{4}$, 0.78, $\frac{2}{3}$  **18.** 1.25, $1\frac{1}{3}$, 1.07

_____  _____

**Test Prep** Circle the correct letter for each answer.

**19.** Which of the following numbers is
**not** greater than 8.29?

**A** 8.30    **C** 8.32

**B** 7.30    **D** 8.39

**20.** Which of the following numbers is
**not** less than 6.48?

**F** 6.08    **H** 6.50

**G** 5.48    **J** 5.49

# Decimal Place Value

Write the word form for each decimal.

**1.** 5.6  _____

**2.** 9.03  _____

**3.** 30.16  _____

Tell the place value of each underlined digit.

**4.** 3<u>2</u>2.58           **5.** 281.5<u>3</u>           **6.** 9<u>8</u>2.04

_____      _____      _____

**7.** 106.<u>9</u>7           **8.** <u>8</u>20.19           **9.** 403.<u>1</u>5

_____      _____      _____

Write each as a decimal. Use a dollar sign for money.

**10.** six and 3 hundredths           **11.** thirteen dollars and fifteen cents

_____                   _____

**12.** sixty-seven dollars and nine cents     **13.** forty-five hundredths

_____                   _____

**14. Math Reasoning** A room at a motel in Williamsburg costs $49.95 per night. Which digit is in the hundredths place? What amount of money is shown by the digit in the hundredths place?

_____

**Test Prep** Circle the correct letter for each answer.

**15.** A T-shirt costs $12.95. Which digit is in the tenths place?

    **A** 1           **B** 2           **C** 5           **D** 9

**16.** Which decimal number has a 2 in the tens place, 0 in the ones place, 6 in the tenths place, and a 7 in the hundredths place?

    **F** 72.60         **G** 60.27         **H** 26.07         **J** 20.67

Name _____

# Addition of Mixed Numbers

Write answers in simplest form.

**1.** $\dfrac{3}{8}$

$+\dfrac{7}{8}$

____

**2.** $1\dfrac{1}{4}$

$+\,3\dfrac{3}{4}$

____

**3.** $1\dfrac{1}{12}$

$+\,2\dfrac{5}{12}$

____

**4.** $2\dfrac{5}{8}$

$+\,3\dfrac{5}{8}$

____

**5.** $4\dfrac{7}{10}$

$+\,1\dfrac{1}{10}$

____

**6.** $2\dfrac{7}{9}$

$+\,5\dfrac{5}{9}$

____

**7.** $3\dfrac{1}{6}$

$+\,4\dfrac{5}{6}$

____

**8.** $1\dfrac{1}{8}$

$+\,2\dfrac{5}{8}$

____

For each number in row a, find one number in row b with a like denominator. Add the numbers in each group of like denominators. Write the sum of each group in the row for Exercise 9. The group with $\dfrac{\square}{12}$ has been done for you.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **a.** $\boxed{\dfrac{9}{12}}$ | $3\dfrac{5}{6}$ | $2\dfrac{1}{9}$ | $\dfrac{1}{3}$ | $\dfrac{2}{5}$ | $3\dfrac{1}{2}$ | $3\dfrac{1}{8}$ | $\dfrac{3}{10}$ | $1\dfrac{1}{4}$ |
| **b.** $4\dfrac{1}{2}$ | $2\dfrac{5}{8}$ | $\boxed{\dfrac{4}{12}}$ | $1\dfrac{3}{5}$ | $\dfrac{5}{9}$ | $2\dfrac{1}{3}$ | $6\dfrac{1}{10}$ | $3\dfrac{2}{4}$ | $\dfrac{2}{6}$ |
| **9.** $\dfrac{13}{12}=1\dfrac{1}{12}$ | | | | | | | | |

**Test Prep** Circle the correct letter for each answer

**10.** Enid bought $1\dfrac{3}{4}$ pounds of broccoli and $2\dfrac{1}{4}$ pounds of carrots. How many pounds of vegetables did she buy?

 **A** $3\dfrac{1}{2}$ pounds  **B** $4\dfrac{1}{2}$ pounds  **C** 4 pounds  **D** 5 pounds

**11.** Jason spent $3\dfrac{7}{12}$ hours washing and detailing his car. He spent $2\dfrac{7}{12}$ hours polishing it. How much time did Jason spend on the car?

 **F** 6 hours  **G** $6\dfrac{1}{6}$ hours  **H** $5\dfrac{1}{6}$ hours  **J** $5\dfrac{7}{12}$ hours

# Addition of Fractions

Write answers in simplest form. Change improper fractions to mixed numbers or whole numbers.

**1.** $\frac{1}{10} + \frac{3}{10}$

**2.** $\frac{2}{7} + \frac{3}{7}$

**3.** $\frac{5}{12} + \frac{1}{12}$

**4.** $\frac{7}{10} + \frac{9}{10} + \frac{3}{10}$

_____   _____   _____   _____

**5.**  $\begin{array}{r} \frac{5}{8} \\ + \frac{3}{8} \\ \hline \end{array}$

**6.**  $\begin{array}{r} \frac{7}{9} \\ + \frac{5}{9} \\ \hline \end{array}$

**7.**  $\begin{array}{r} \frac{7}{16} \\ + \frac{8}{16} \\ \hline \end{array}$

**8.**  $\begin{array}{r} \frac{6}{9} \\ + \frac{5}{9} \\ \hline \end{array}$

**9.**  $\begin{array}{r} \frac{9}{17} \\ + \frac{8}{17} \\ \hline \end{array}$

**10.**  $\begin{array}{r} \frac{6}{20} \\ + \frac{4}{20} \\ \hline \end{array}$

**11.**  $\begin{array}{r} \frac{7}{12} \\ + \frac{7}{12} \\ \hline \end{array}$

**12.**  $\begin{array}{r} \frac{3}{10} \\ + \frac{7}{10} \\ \hline \end{array}$

**13.** Kim did $\frac{1}{3}$ of her homework after school. She did $\frac{2}{3}$ of it after dinner. How much of her homework did she complete? _____

**14. Algebra** If $n + \frac{7}{9} = 1$, then $n = $ _____

**Test Prep** Circle the correct letter for each answer.

**15.** Joe spent $\frac{3}{4}$ hour walking to Paul's house. He and Paul played video games for $\frac{3}{4}$ hour. Then Joe walked back home, which took another $\frac{3}{4}$ hour. How many hours was Joe away from home?

**A** 2 hours  **B** $2\frac{1}{4}$ hours  **C** $1\frac{1}{2}$ hours  **D** $1\frac{3}{4}$ hours

**16.** Leah ate $\frac{3}{8}$ of a pizza for lunch. Jane ate $\frac{1}{8}$ of the pizza. What part of the pizza did they eat altogether?

**F** All  **G** $\frac{1}{2}$  **H** $\frac{7}{8}$  **J** $1\frac{1}{8}$

Name _____

# Mixed Numbers

Write an improper fraction as well as a mixed number or whole number for each picture.

**1.**



**2.**



_____          _____
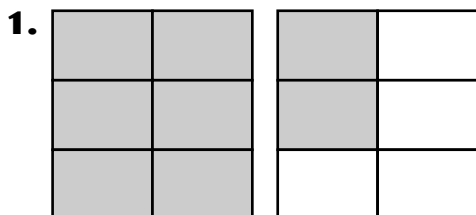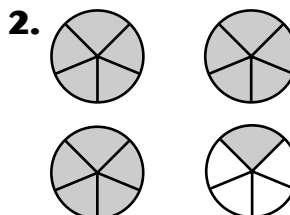
Change each improper fraction to a mixed number or a whole number. Change each mixed number to an improper fraction.

**3.** $\frac{5}{4}$ _____   **4.** $2\frac{5}{9}$ _____   **5.** $\frac{24}{12}$ _____   **6.** $\frac{25}{7}$ _____   **7.** $\frac{16}{9}$ _____

**8.** **Math Reasoning** Ned needs $\frac{1}{4}$ of a gallon of paint to paint one room. How many rooms can he paint with 3 gallons of paint?

_____

**Test Prep** Circle the correct letter for each answer.

**9.** Bella bought 2 boxes of popcorn, each with 8 bags. Her guests ate 2 bags of popcorn. Which mixed number shows how many boxes of popcorn are left?

    **A** $1\frac{4}{8}$ boxes   **B** $1\frac{2}{8}$ boxes   **C** $1\frac{5}{8}$ boxes   **D** $1\frac{6}{8}$ boxes

**10.** Which fraction is less than 1?

    **F** $\frac{8}{9}$   **G** $\frac{9}{7}$   **H** $\frac{13}{3}$   **J** $\frac{10}{10}$

# Zeros in the Quotient

**1.** 6)636

**2.** 800 ÷ 5

**3.** 4,255 ÷ 7

**4.** 6)4,250

_____      _____      _____      _____

**5.** 5,630 ÷ 4

**6.** 8,910 ÷ 9

**7.** 3)28,711

**8.** 25,636 ÷ 8

_____      _____      _____      _____

**9.** Five medium-sized strawberries have about 1,000 seeds.
About how many seeds does each strawberry contain?

_____

**10.** Mary Beth has 215 stickers. She wants to fill 2 albums
with the same number of stickers in each. How many
stickers will be in each album? How many will be left over?

_____

**11. Math Reasoning** Joan divided 483 by 6 and got 8 R3.
Use estimation to explain why this quotient must be wrong.
Then do the division and explain the mistake Joan made.

_____

_____

**Test Prep** Circle the correct letter for each answer.

**12.** The shipping department has 5,648 compact disks to
put into boxes. If each box holds 8 disks, how many
boxes are needed?

   **A** 70 boxes       **B** 706 boxes       **C** 718 boxes       **D** 7,060 boxes

**13.** Deirdre decorates cakes 5 days a week. If she decorates
200 cakes in one week and decorates the same number
each day, how many cakes does she decorate each day?

   **F** 4 cakes                          **H** 52 cakes

   **G** 40 cakes                         **J** 80 cakes

# Estimating Quotients

Estimate each quotient. Write the numbers you used.

**1.** 273 ÷ 3

_____

**2.** 77 ÷ 4

_____

**3.** 291 ÷ 7

_____

**4.** 59 ÷ 6

_____

**5.** 122 ÷ 3

_____

**6.** 439 ÷ 5

_____

**7.** 328 ÷ 4

_____

**8.** 2,350 ÷ 8

_____

**9.** 7,000 ÷ 9

_____

**10. Math Reasoning** A store has a total of 231 golf balls. There are 3 golf balls in a package. About how many packages of golf balls are there?

_____

**11.** Angelina has 125 peonies in her flower shop. About how many bouquets of 6 peonies can she make?

_____

**Test Prep** Circle the correct letter for each answer.

**12.** Which expression would give the best estimate for 46 ÷ 5?

    **A** 50 ÷ 5      **B** 45 ÷ 5      **C** 35 ÷ 5      **D** 30 ÷ 5

**13.** Which expression would give the best estimate for 87 ÷ 9?

    **F** 54 ÷ 9      **G** 63 ÷ 9      **H** 81 ÷ 9      **J** 90 ÷ 9

# Dividing Two-Digit Numbers

**1.** $6\overline{)78}$       **2.** $3\overline{)81}$       **3.** $7\overline{)77}$       **4.** $4\overline{)88}$

_____    _____    _____    _____

**5.** $63 \div 3$       **6.** $94 \div 2$       **7.** $4\overline{)84}$       **8.** $2\overline{)34}$

_____    _____    _____    _____

**9.** $60 \div 4$       **10.** $5\overline{)85}$       **11.** $87 \div 3$       **12.** $5\overline{)70}$

_____    _____    _____    _____

**13.** Dancers are placed in groups of 4 for a square dance. There are 56 dancers. How many groups of 4 can be made?

_____

**14.** The refreshment table includes cups of fruit punch. There are 84 cups of fruit punch in one bowl. Suppose each dancer drinks 3 cups of fruit punch. How many dancers can get punch from one bowl?

_____

**15. Algebra** Solve: $7x = 98$. Multiply to check. _____

**Test Prep** Circle the correct letter for each answer.

**16.** Sixty fourth-grade students sing in the school chorus. At performances they stand on risers. Each riser holds 5 students. How many risers are needed?

     **A** 4 risers     **C** 10 risers

     **B** 5 risers     **D** 12 risers

**17.** Jeff has 16 egg rolls. He divides them equally among his 3 friends and himself. How many egg rolls does each person get?

     **F** 2 egg rolls     **H** 4 egg rolls

     **G** 3 egg rolls     **J** 5 egg rolls

# Mental Math: Dividing Multiples of 10, 100, and 1,000

**1.** 100 ÷ 5          **2.** 280 ÷ 4          **3.** 2,500 ÷ 5          **4.** 2,100 ÷ 3

_____          _____          _____          _____

**5.** 8,000 ÷ 4          **6.** 16,000 ÷ 8          **7.** 36,000 ÷ 6          **8.** 81,000 ÷ 9

_____          _____          _____          _____

Cookbooks are displayed in special cases, 6 to a case.
Use the table to solve Exercises 9 and 10.

**9.** How many cases are needed to display
the Indian and the Italian books?

_____

**10.** How many more cases are needed
to display the French books than the
English ones?

_____

| Cookbooks | |
|---|---|
| Italian | 120 |
| French | 1,800 |
| English | 300 |
| Indian | 240 |
| Chinese | 480 |

**11. Algebra** Find the value of $\dfrac{3,000}{n}$ when $n$ is 5.

_____

**12. Math Reasoning** Write a multiplication sentence to check
the answer to 7,200 ÷ 8 = 900.

_____

**Test Prep** Circle the correct letter for each answer.

**13.** What is the answer to a division problem called?

   **A** Dividend          **B** Product          **C** Divisor          **D** Quotient

**14.** Julio will send 540 books to a neighboring library.
If each box contains nine books, how many boxes
will Julio need?

   **F** 30 boxes          **G** 60 boxes          **H** 40 boxes          **J** 50 boxes

# Multiplying Greater Numbers

**1.**  263
  $\times$  17

**2.**  534
  $\times$  86

**3.**  3,357
  $\times$   32

**4.**  237
  $\times$  53

**5.**  855
  $\times$  54

**6.**  9,362
  $\times$   71

**7.** 421 $\times$ 45

**8.** 357 $\times$ 74

**9.** 64 $\times$ 848

_____

_____

_____

**10.** 93 $\times$ 4,247

**11.** $99.89 $\times$ 57

**12.** 81 $\times$ 2,777

_____

_____

_____

**13. Mental Math**  Is the product of 686 and 50 greater than or less than 30,000? Explain.

_____

_____

**14. Algebra**  Find the value of 78 $\times$ n when n = 3,237. _____

**15.** Laura addresses 127 envelopes every week. Each envelope contains 4 pieces of paper. How many envelopes does Laura address in one year? Remember that there are 52 weeks in a year.

_____

**Test Prep**   Circle the correct letter for each answer.

**16.** Your pet eats food that costs $0.25 a day. About how much does it cost to feed your pet for a year? Remember that there are 365 days in a year.

   **A** $912.50       **B** $219.25       **C** $95.52       **D** $91.25

**17.** The animal shelter has 329 dogs in it. It costs $0.53 per day to feed each dog. How much does all the food cost for this day?

   **F** $174.37       **G** $126.67       **H** $165.00       **J** $178.75

# Multiplying by a Multiple of Ten

**1.**   15
   $\times$ 20

**2.**   46
   $\times$ 50

**3.**   272
   $\times$ 60

**4.**  1,507
   $\times$   80

**5.**  3,317
   $\times$   30

**6.** 20 $\times$ 96

**7.** 70 $\times$ 6,507

**8.** 45 $\times$ 50

**9.** 95 $\times$ 40

_____    _____    _____    _____

**10.** 30 $\times$ 445

**11.** 633 $\times$ 90

**12.** 82 $\times$ 60

**13.** 2,270 $\times$ 20

_____    _____    _____    _____

**14. Mental Math**  Find 98 $\times$ 30.  _____

**15. Algebra**  Find the value of 70$x$ + 84 when $x$ is 65.  _____

**16.** If 25 children flew 23 kites on 27 out of 365 days, on how many days that

year did children not fly kites?  _____

**17. Math Reasoning**   What happens to any product if both factors are cut in half?

_____

**Test Prep**   Circle the correct letter for each answer.

**18.** New World monkeys, the kind found in the rain forest in South America,
have 36 teeth. Most monkeys live in groups of 20. What is the total
number of teeth one group of 20 New World monkeys has?

   **A** 400          **B** 720          **C** 760          **D** 1,440

**19.** Old World monkeys have 32 teeth. What is the total number of teeth
one 20-monkey group has?

   **F** 640          **G** 460          **H** 520          **J** 1,280

# Multiplying by a Multiple of Ten

**1.** 15
× 20

**2.** 46
× 50

**3.** 272
× 60

**4.** 1,507
× 80

**5.** 3,317
× 30

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**7.** 70 × 6,507

**8.** 45 × 50

**9.** 95 × 40

_____    _____    _____    _____

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**13.** 2,270 × 20

_____    _____    _____    _____

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# Estimating Products

Round and estimate the products mentally.

**1.**   25
   $\times$  3

**2.**   39
   $\times$  4

**3.**   62
   $\times$  5

**4.**   311
   $\times$  6

**5.**   $1.75
   $\times$   4

**6.**   603
   $\times$  22

**7.**   $4.93
   $\times$   12

**8.**   408
   $\times$  62

**9.**   1,218
   $\times$   78

**10.**   2,579
   $\times$   78

**11.** 16 $\times$ 189 =  _____

**12.** 31 $\times$ 137 =  _____

**13.** 27 $\times$ $19.15 =  _____

**14.** 350 $\times$ 17 =  _____

**15.** 261 $\times$ 41 =  _____

**16.** 2,311 $\times$ 14 =  _____

**17. Algebra** When Jessica computed 47 $\times$ 18, she got an answer of 8,460. Show how you would estimate to check if her answer is reasonable.

_____

_____

**Test Prep**   Circle the correct letter for the answer.

**18.** If Rosemary's mother spends about $20.00 on lunch each week, what is a reasonable estimate of the amount of money she spends on lunch each month?

   **A** $40.00

   **B** $80.00

   **C** $140.00

   **D** $180.00

**19.** In one day, 1,265 people visited the Washington Monument. Estimate the number of visitors to the Washington Monument in 28 days.

   **F** 39,000

   **G** 26,000

   **H** 41,030

   **J** 30,000

# Multiplying Greater Numbers

**1.**  2,143
×      5

**2.**  3,121
×      4

**3.**  11,256
×      6

**4.**  32,017
×      7

**5.**  5,502
×      8

**6.**  87,483
×      9

**7.**  18,471
×      6

**8.**  36,572
×      8

**9.** 3,765 × 4

**10.** 6 × 7,648

**11.** 5 × 12,264

_____

_____

_____

**12.** There are 36,200 pencils on each of 4 shelves
at the office supply manufacturer's warehouse.

How many pencils are there altogether? _____

**13. Algebra** Find the value of 7*n* when *n* is 7,565? _____

**Test Prep**  Circle the correct letter for each answer. Use the pictograph
for Exercises 14 and 15.

**14.** How many carnations are on
the floats in the parade?

**A** 3,150 carnations

**B** 4,200 carnations

**C** 5,150 carnations

**D** 5,250 carnations

**15.** How many more roses are
in the parade than pansies?

**F** 1,050 more roses

**G** 1,500 more roses

**H** 2,100 more roses

**J** 3,050 more roses

**Flowers in the Parade**

Roses

Carnations

Pansies

Each 🌸 represents 1,050 flowers
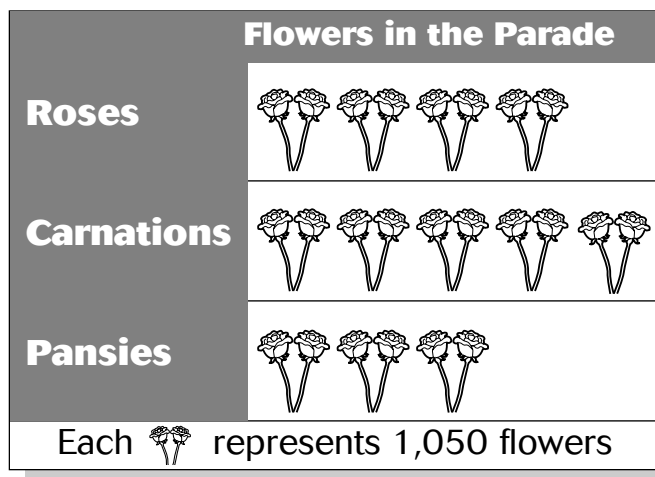
**Problem-Solving Strategy**
# Make a Table

Complete the table. Then use it to solve the problems.

| Number of Teams | Number of Volleyball Players | Number of Lacrosse Players |
|:---:|:---:|:---:|
| 1 | 6 | 10 |
| 2 | 12 | 20 |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |

**1.** How many players are there on three volleyball
and three lacrosse teams combined?                          _____

**2.** Which equal number of volleyball and lacrosse
teams results in a number divisible by 10?                  _____

**3.** **Math Reasoning**  Why is making a table a good strategy to know?

_____

_____

**4.** It costs $8 for each T-shirt. They can be bought
only in boxes of 3. If there are 16 players on
the basketball team, how many shirts can
they buy? How much money will the
T-shirts cost altogether? _____

**5.** Carmen spends 20 minutes more each week than
the week before painting pictures. If she paints 40 minutes
the first week, how long will she work the fifth week? _____

# Multiplying Two- and Three-Digit Numbers

**1.**   75
     $\times$  5

**2.**   23
     $\times$  4

**3.**   160
     $\times$   5

**4.**   344
     $\times$   7

**5.** 56 $\times$ 7

**6.** 9 $\times$ 27

**7.** 6 $\times$ 264

**8.** 498 $\times$ 6

_____

_____

_____

_____

**9.** Seven china-doll painters each painted 2 eyes on each
of 22 doll faces a day. How many eyes in all did they
paint in one day?                                                    _____

**10.** Find the value of 718 $\times$ $n$ when $n = 4$.                         _____

**11. Mental Math**  Explain how you would find 8 $\times$ 303 mentally.

_____

_____

**12. Math Reasoning**  Give an example of a two-digit number
multiplied by a one-digit number that does not require
regrouping to find the product.

_____

**Test Prep**  Circle the correct letter for each answer. Use the
information in the table to solve Exercises 13 and 14.

**13.** Mrs. Tovey's class wants to make
7 batches of modeling clay. How many
milliliters of baking soda do they need?

**A** 540 ml          **C** 1,155 ml

**B** 875 ml          **D** 1,750 ml

| Recipe for Modeling Clay | |
|---|---|
| Baking Soda | 250 ml |
| Cornstarch | 125 ml |
| Warm Water | 165 ml |

**14.** Each group of 4 students makes 1 batch of modeling clay. How many
milliliters of cornstarch will 12 students use?

**F** 48 ml          **G** 375 ml          **H** 1,000 ml          **J** 1,500 ml

**Problem-Solving Skill**
# Multistep Problems

Sally wants to decorate her balcony with potted plants. She wants to buy 4 each of African violet and begonia plants. The cost of the plants is in the table below. How much would Sally have to pay for the plants?

**1.** What operations do you need to perform in order to solve the problem?

_____

| Plant | Cost |
|----------------|------|
| Begonia | $17 |
| Jasmine | $13 |
| African violet | $9 |

**2.** Which operation should you perform first?

_____

**3.** Write a number sentence that you could use to find the total cost for Sally to buy 4 jasmine plants.

_____

**4.** **Math Reasoning** Suppose Sally has only $60 and wants to buy only African violets. What steps do you need to complete to find the greatest number of African violets that Sally could buy? Explain.

_____

_____

_____

**5.** At the nursery, there is a sale on red clay pots that cost $5 each, and another sale on blue plastic pots that cost $3 each. Ms. Sobol wants to buy 6 red clay pots and 8 blue plastic pots. What is her total cost?

_____

**6.** Mr. Roberts has $40 and wants to buy the same number of red clay pots and blue plastic pots. How many of each can he buy?

_____

# Decimals in Hundredths

Write each as a decimal.

**1.** $\frac{36}{100}$ _____  **2.** $\frac{78}{100}$ _____  **3.** $\frac{52}{100}$ _____  **4.** $\frac{10}{100}$ _____

**5.** $\frac{29}{100}$ _____  **6.** $\frac{41}{100}$ _____  **7.** $\frac{5}{100}$ _____  **8.** $\frac{13}{100}$ _____

What is the value of the digit 2 in each number.

**9.** 30.02   **10.** 7.29   **11.** 32.88   **12.** 36.21   **13.** 21.3

_____  _____  _____  _____  _____

**14.** There are 100 centimeters in 1 meter. Babs has a ribbon that is 100 centimeters and uses half of it in an art project. What part does she use? Give your answer as a fraction and a decimal.

_____

**15.** Paul bought an ice cream cone for 70 cents. He paid with a dollar bill. The store clerk gave him 40 cents change. Did Paul get the correct change? Explain.

_____

**Test Prep**   Circle the correct letter for each answer.

Joy and April have saved $6.82. They have 6 dollar bills, 4 dimes and 42 pennies. They divide the money equally between themselves.

**16.** Each girl will get 3 dollar bills. In addition what hundredths of a dollar will each girl receive?

 **A** 0.40

 **B** 4.0

 **C** 41

 **D** 0.41

**17.** How many more hundredths of a dollar do they have altogether in pennies than dimes?

 **F** 20

 **G** 0.20

 **H** 0.02

 **J** 0.22

# Decimals in Tenths

Write a fraction and a decimal for the shaded part.

**1.** ▢▢▢▢▢▢▢▢▢▢

_____

**2.** ▢▢▢▢▢▢▢▢▢▢

_____

**3.** ▢▢▢▢▢▢▢▢▢▢

_____
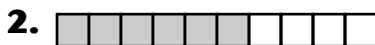
Write each as a decimal.

**4.** three tenths

_____

**5.** six tenths

_____

**6.** eight tenths

_____

**7.** seven tenths

_____

**8.** one tenth

_____

**9.** four tenths

_____

**10.** $\frac{2}{10}$ _____

**11.** $\frac{5}{10}$ _____

**12.** $\frac{9}{10}$ _____

**13.** $\frac{7}{10}$ _____

**14.** $9\frac{2}{10}$ _____

**15.** $6\frac{5}{10}$ _____

**16.** Which picture shows four tenths?

**a.** ☒☒☒☒☒☒☒▢▢▢

**b.** ☒☒☒☒▢▢▢▢▢▢
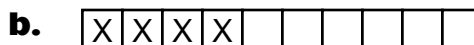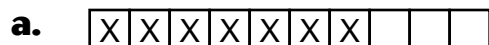
**17.** Draw a picture to show 0.3.

**Test Prep** Circle the correct letter for the answer.

**18.** There were 10 children waiting for the school bus. Six wore caps. What fraction and decimal tells how many students did not wear caps?

**A** $\frac{3}{10}$ or 0.3

**B** $\frac{6}{10}$ or 0.6

**C** $\frac{4}{10}$ or 0.4

**D** $4\frac{4}{10}$ or 4.4

# Understanding Mixed Numbers

Write a mixed number for the part that is shaded.

**1.**

_____

**2.**

_____

**3.**

_____

**4.**

_____
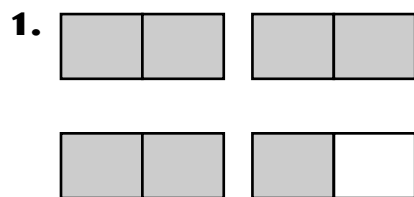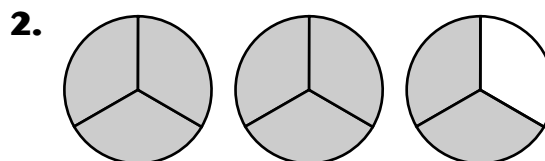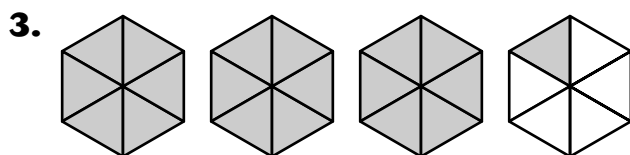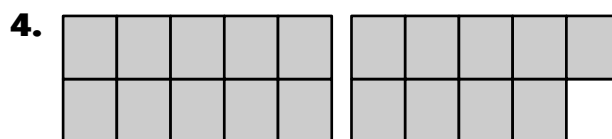
Measure each object to the nearest quarter inch.

**5.**

_____

**6.**

_____
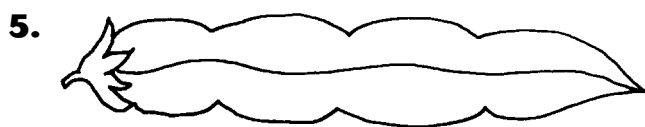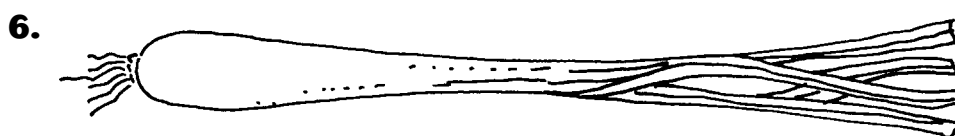
**Test Prep**   Circle the correct letter for each answer.

Mrs. Garcia is baking cupcakes. She has 3 cupcake pans, and in each pan there are 12 sections for batter. She poured the batter into 30 sections.

**7.** What mixed number tells how many pans have been filled with batter?

   **A**  $1\frac{6}{12}$

   **B**  $1\frac{3}{12}$

   **C**  $2\frac{6}{12}$

   **D**  $2\frac{3}{12}$

**8.** What fraction of the sections still needs to be filled?

   **F**  $\frac{3}{36}$

   **G**  $\frac{6}{36}$

   **H**  $\frac{8}{36}$

   **J**  $\frac{10}{36}$

# Adding and Subtracting Fractions with Like Denominators

Find each sum or difference. You may use fraction strips to help.

**1.** $\frac{3}{12} + \frac{2}{12} =$ _____

**2.** $\frac{1}{3} + \frac{1}{3} =$ _____

**3.** $\frac{8}{10} - \frac{3}{10} =$ _____

**4.** $\frac{6}{10} - \frac{3}{10} =$ _____

**5.** $\frac{4}{8} + \frac{2}{8} =$ _____

**6.** $\frac{2}{8} + \frac{5}{8} =$ _____

**7.** $\frac{3}{4} - \frac{2}{4} =$ _____

**8.** $\frac{4}{6} - \frac{3}{6} =$ _____

**9.** $\frac{2}{3} + \frac{1}{3} =$ _____

**10.** $\frac{1}{6} + \frac{3}{6} =$ _____

**11.** $\frac{2}{10} + \frac{4}{10} =$ _____

**12.** $\frac{9}{12} - \frac{3}{12} =$ _____

**13.** $\frac{2}{5} - \frac{1}{5} =$ _____

**14.** $\frac{3}{8} + \frac{2}{8} =$ _____

**15.** $\frac{6}{8} + \frac{0}{8} =$ _____

**16.** $\frac{3}{8} - \frac{2}{8} =$ _____

**17.** $\frac{8}{12} - \frac{5}{12} =$ _____

**18.** $\frac{2}{5} - \frac{2}{5} =$ _____

**19.** A pizza was cut into 8 equal slices. Jill ate 4 slices.
What fraction of the pizza is left?

_____

**20.** There is $\frac{3}{4}$ of a gallon of milk in the container. The Swanson family drinks
$\frac{2}{4}$ gallon of milk at dinner. What fraction of the gallon of milk is left?

_____

**21.** Marta runs $\frac{1}{8}$ of a mile in a relay race. She then hands the baton to Juana who
runs $\frac{1}{8}$ of a mile. What fraction of a mile did both girls run? _____

**Test Prep**  Circle the correct letter for the answer.

**22.** The hockey team played 15 games during the regular season. They played
5 games in the playoffs. In all their games they won 18 games. What fraction
of their games did they win?

**A** $\frac{15}{18}$ games

**B** $\frac{10}{18}$ games

**C** $\frac{18}{20}$ games

**D** $\frac{5}{20}$ games

# Comparing and Ordering Fractions

**Algebra** Compare. Write $<$, $>$, or $=$ in the $\bigcirc$.

**1.**

$\frac{3}{4} \bigcirc \frac{1}{4}$

**2.**

$\frac{3}{6} \bigcirc \frac{4}{6}$

**3.**

$\frac{4}{6} \bigcirc \frac{1}{2}$

**4.**
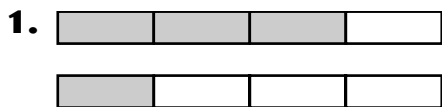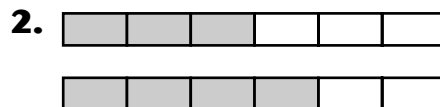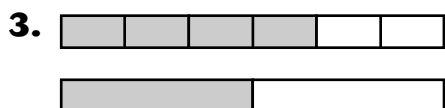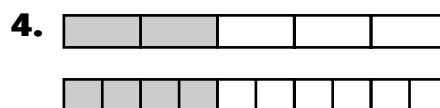
$\frac{2}{5} \bigcirc \frac{4}{10}$

**5.** $\frac{1}{4} \bigcirc \frac{1}{8}$    **6.** $\frac{3}{10} \bigcirc \frac{9}{10}$    **7.** $\frac{1}{2} \bigcirc \frac{7}{10}$    **8.** $\frac{1}{6} \bigcirc \frac{1}{3}$

**9.** $\frac{5}{8} \bigcirc \frac{3}{8}$    **10.** $\frac{7}{12} \bigcirc \frac{1}{2}$    **11.** $\frac{4}{4} \bigcirc \frac{3}{3}$    **12.** $\frac{1}{4} \bigcirc \frac{4}{8}$

Arrange the fractions in order from least to greatest.

**13.** $\frac{3}{4}, \frac{3}{8}, \frac{1}{2}$      **14.** $\frac{2}{5}, \frac{3}{10}, \frac{7}{10}$      **15.** $\frac{1}{4}, \frac{1}{2}, \frac{1}{8}$

_____      _____      _____

**16. Math Reasoning** I am a fraction with a denominator of 4.
I am greater than $\frac{1}{2}$, but less than 1. What fraction am I? _____

**Test Prep** Circle the correct letter for the answer.

**17.** There were 10 granola bars in a box. Anna ate 2 and Jon ate 4. Which number sentence tells you they ate more than half of the box?

**A** $\frac{2}{10} + \frac{4}{10} > \frac{5}{10}$      **C** $\frac{3}{10} + \frac{4}{10} > \frac{5}{10}$

**B** $\frac{4}{10} - \frac{2}{10} = \frac{2}{10}$      **D** none of the above

# Finding Equivalent Fractions

Find the equivalent fractions.

**1.**

$\dfrac{1}{2} =$ _____

**2.**

$\dfrac{2}{3} =$ _____

**3.**

$\dfrac{3}{4} =$ _____

**4.**

$\dfrac{2}{12} =$ _____

**5.**

$\dfrac{2}{8} =$ _____

**6.**

$\dfrac{5}{5} =$ _____
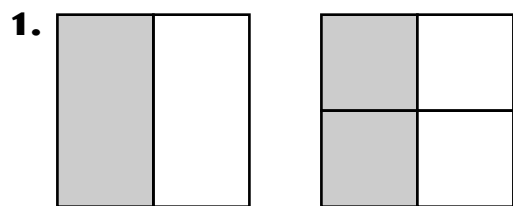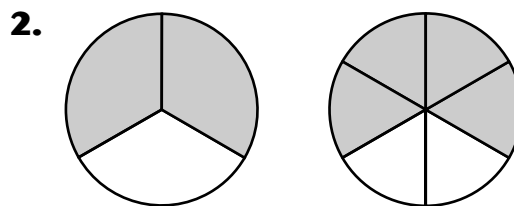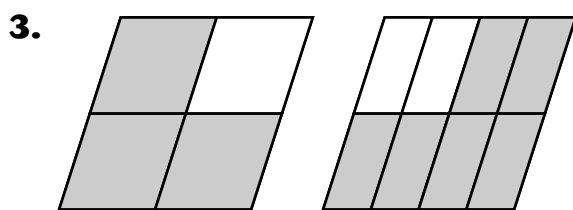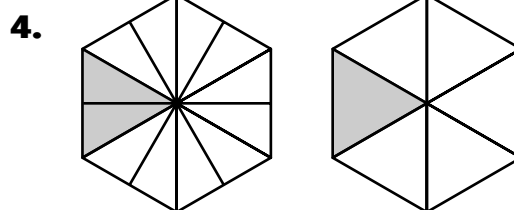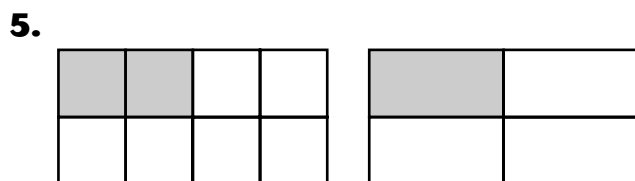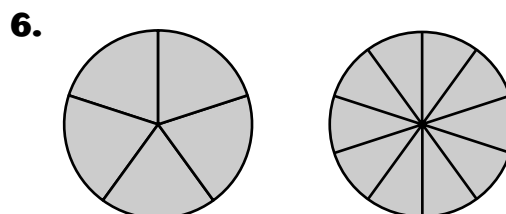
**7.** Sara colored $\dfrac{1}{2}$ of her paper green. Melanie folded her paper into eight sections. How many sections should Melanie color to make her paper look just like Sara's? _____

**Test Prep**  Circle the correct letter for the answer.

**8.** Jason had a candy bar with 9 sections. He gave three sections to Barry. Barry knew he received $\dfrac{3}{9}$ of the candy bar. What other fraction name could we give for the 3 sections of candy?

**A** $\dfrac{2}{9}$          **B** $\dfrac{3}{10}$          **C** $\dfrac{1}{4}$          **D** $\dfrac{1}{3}$

# Dividing Two-Digit Numbers

**1**. 2)82      **2.** 3)69      **3.** 5)75      **4.** 6)90      **5.** 2)96

**6.** 3)93      **7.** 8)96      **8.** 3)87      **9.** 6)96      **10.** 2)86

**11.** 51 ÷ 3      **12.** 44 ÷ 4      **13.** 78 ÷ 3      **14.** 42 ÷ 6

_____   _____   _____   _____

**Algebra**  Write > , <, or = for each ◯.

**15.** 80 ÷ 8 ◯ 30 ÷ 3          **16.** 30 ÷ 5 ◯ 300 ÷ 5

**17.** 90 ÷ 2 ◯ 90 ÷ 9          **18.** 40 ÷ 2 ◯ 80 ÷ 4

**19.** A car dealer has space for 7 cars in each row of his parking lot. If a new shipment of cars from the automobile plant contains 84 cars, about how many rows of parking space will the dealer need for those cars?

_____

**Test Prep**   Circle the correct letter for each answer.

There were 85 students, 8 parents, and 3 teachers going on a trip to the Nature Center. They took 4 small buses. Each bus could take 25 passengers.

**20.** If the passengers were divided equally among the buses, how many passengers went on each bus?

    **A** 20 passengers

    **B** 22 passengers

    **C** 24 passengers

    **D** 26 passengers

**21.** How many empty seats were there altogether on the four buses?

    **F** 4 seats

    **G** 5 seats

    **H** 6 seats

    **J** 7 seats

# Estimating Quotients      1

Estimate each quotient. Write the numbers you used.

**1.** 21 ÷ 4      **2.** 23 ÷ 7      **3.** 67 ÷ 9      **4.** 10 ÷ 3

_____    _____    _____    _____

**5.** 34 ÷ 5      **6.** 19 ÷ 9      **7.** 139 ÷ 4      **8.** 555 ÷ 6

_____    _____    _____    _____

**9.** 613 ÷ 9      **10.** 398 ÷ 5      **11.** 469 ÷ 9      **12.** 839 ÷ 9

_____    _____    _____    _____

**13.** 235 ÷ 7      **14.** 511 ÷ 8      **15.** 312 ÷ 5      **16.** 710 ÷ 8

_____    _____    _____    _____

**17.** A board game contains 22 cards. There can be 3, 4, 5, or 6 players. About how many cards will each player receive if there are 3 players? 4 players? 5 players? 6 players?

_____

**18.** Kimiko counted 193 ants in 4 ant colonies. If each ant colony had about the same number of ants, about how many ants lived in each colony?

_____

**Test Prep**    Circle the correct letter for the answer.

**19.** At the nursery there are 8 rows of evergreen trees. There are 58 evergreens in the nursery. About how many evergreen trees are in each row?

     **A** 7 evergreen trees

     **B** 8 evergreen trees

     **C** 9 evergreen trees

     **D** 10 evergreen trees

# Mental Math: Division Patterns

**1.** 8)72  8)720  8)7,200  **2.** 6)18  6)180  6)1,800

**3.** 48 ÷ 8 = _____   **4.** 14 ÷ 7 = _____   **5.** 81 ÷ 9 = _____

 480 ÷ 8 = _____    140 ÷ 7 = _____    810 ÷ 9 = _____

 4,800 ÷ 8 = _____   1,400 ÷ 7 = _____   8,100 ÷ 9 = _____

**6.** 10 ÷ 5 = _____   **7.** 24 ÷ 4 = _____   **8.** 30 ÷ 10 = _____

 100 ÷ 5 = _____    240 ÷ 4 = _____    300 ÷ 10 = _____

 1,000 ÷ 5 = _____   2,400 ÷ 4 = _____   3,000 ÷ 10 = _____

**9.** 4,500 ÷ 9  **10.** 160 ÷ 2  **11.** 180 ÷ 3  **12.** 2,800 ÷ 7

 _____    _____    _____    _____

**13.** The Ramirez family traveled 350 miles in one day. If they traveled for 7 hours, how many miles did they travel each hour?

 _____

**14.** The Sleepy Way Hotel houses 240 people. If all the rooms are full and there are 3 people to each room, how many rooms does the hotel have?

 _____

**Test Prep** Circle the correct letter for the answer.

**15.** Rod has 180 seashells. One half of them are from the Pacific Ocean, and the other half are from the Atlantic Ocean. How many are from the Pacific Ocean? Which number sentence would you use to solve the problem?

 **A** 180 + 180 = 360 shells    **C** 18 ÷ 9 = 2 shells

 **B** 180 ÷ 2 = 90 shells     **D** 1,800 ÷ 9 = 200 shells

Name _____

# Multiplying Three-Digit Numbers

**1.** 312
× 5

**2.** 572
× 2

**3.** 276
× 4

**4.** 371
× 5

**5.** 424
× 3

**6.** 617
× 5

**7.** $1.31
× 8

**8.** $2.65
× 2

**9.** 193
× 3

**10.** 481
× 3

**11.** 342
× 5

**12.** $2.83
× 3

**13.** 412
× 8

**14.** 260
× 3

**15.** 649
× 2

**16.** $3.52
× 4

**17.** $3.19
× 7

**18.** $5.14
× 3

**19.** $8.29
× 6

**20.** $5.78
× 9

**21.** 459 × 4

_____

**22.** $6.32 × 8

_____

**23.** 147 × 5

_____

**24.** 675 people arrive at the ballpark each hour. If that rate continues, how many people will be at the ballpark at the end of 3 hours?

_____

**Test Prep** Circle the correct letter for the answer.

**25.** Romelia receives $8.75 a week for selling newspapers. How much will she earn in 7 weeks?

**A** $58.25      **B** $60.25      **C** $61.25      **D** $61.15

# Estimating Products

Round to the underlined place. Estimate each product.

**1.** $\underline{2}3 \times 9 =$ _____     **2.** $\underline{5}6 \times 8 =$ _____     **3.** $\underline{8}3 \times 4 =$ _____

**4.** $\underline{9}3 \times 6 =$ _____     **5.** $\underline{2}9 \times 5 =$ _____     **6.** $\underline{8}6 \times 4 =$ _____

**7.** $\underline{7}59 \times 5 =$ _____     **8.** $\underline{8}27 \times 9 =$ _____     **9.** $\underline{6}13 \times 7 =$ _____

**10.** $\underline{2}92 \times 6 =$ _____     **11.** $\underline{7}79 \times 3 =$ _____     **12.** $\underline{4}19 \times 4 =$ _____

**13.** There are 24 hours in one day. About how many hours are there in 7 days?

_____

**14.** A friendship quilt is being made in each school. There are 6 schools. Each quilt will have 225 squares sewn together. About how many squares will be needed to sew the six quilts?

_____

**15.** **Math Reasoning** Mrs. Field's class collects 338 old newspapers and Mrs. Hood's class collects 279 old newspapers each day. Each class collects the same amount for three days. Will they reach their goal of 1,500 newspapers in three days? Explain.

_____

_____

_____

**Test Prep** Circle the correct letter for each answer.

There are 36 inches in one yard. There are 3 feet in one yard.

**16.** About how many inches are there in 7 yards?

    **A** 210 inches     **C** 320 inches

    **B** 280 inches     **D** 360 inches

**17.** About how many feet would be in 721 yards?

    **F** 900 feet     **H** 2,100 feet

    **G** 1,800 feet     **J** 2,400 feet

Name _____

# Area

Find each area. Write your answer in square units.

**1.**

_____
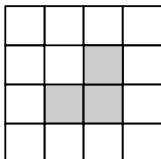
**2.**

_____
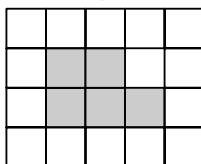
**3.**

_____
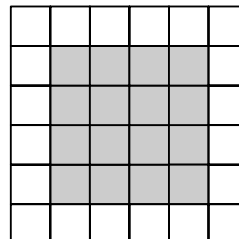
**4.**

_____
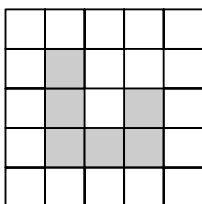
**5.**

_____
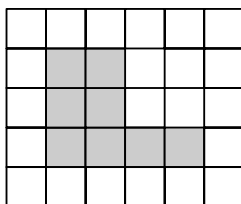
**6.**

_____
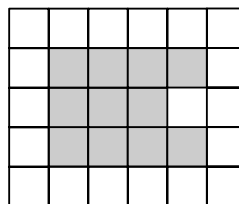
**7.**

_____
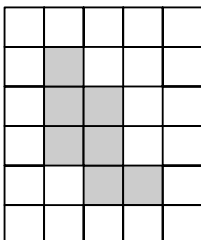
**8.**

_____
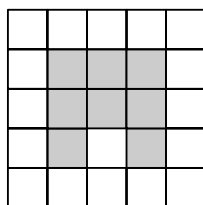
**9.**

_____
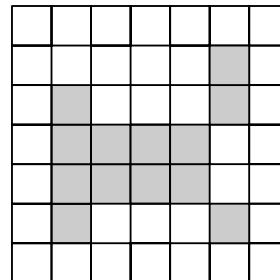
**10.** Carlos builds a patio with square blocks in his backyard. The patio looks like this. What is the area of the patio?

_____
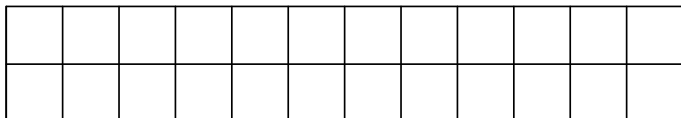
**Test Prep** Circle the correct letter for the answer.

**11.** There is a rectangle with 27 square units. Stacey counts the units on the top and the side of the rectangle. How many units could go across the top and down the side?

**A** 3 and 8    **B** 3 and 9    **C** 4 and 8    **D** 3 and 7

Name _____

# Plane Figures

Name each figure.

**1.** [rectangle]

_____

**2.** [triangle pointing down]

_____

**3.** [pentagon]

_____

**4.** [hexagon]

_____

**5.** [square]

_____

**6.** [right triangle]

_____
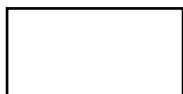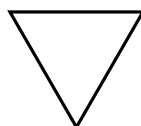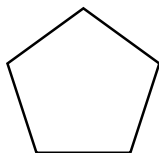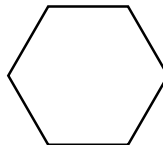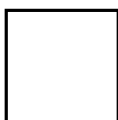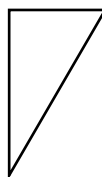
**7.** Look at the figure at the right. Which shapes do you see?

_____
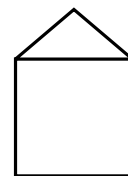
**8.** In the figure at the right, which shapes do you see?

_____

_____
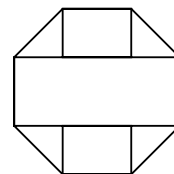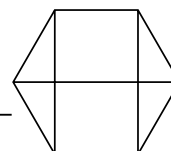
**9.** In the figure at the right, which shapes do you see?

_____

_____

# Finding Missing Numbers

**Algebra** Find each missing number.

**1.** 35 ÷ _____ = 7          **2.** _____ ÷ 4 = 2          **3.** 64 ÷ _____ = 8

**4.** 21 ÷ _____ = 7          **5.** _____ ÷ 5 = 9          **6.** _____ ÷ 6 = 8

**7.** 10 ÷ _____ = 10        **8.** 72 ÷ 9 = _____        **9.** 16 ÷ _____ = 4

**10.** _____ ÷ 8 = 3        **11.** 5 ÷ _____ = 5        **12.** _____ ÷ 2 = 7

**13.** 25 ÷ _____ = 5        **14.** 7 ÷ _____ = 7        **15.** 54 ÷ _____ = 9

**16.** 63 ÷ _____ = 7        **17.** _____ ÷ 9 = 3        **18.** 32 ÷ _____ = 4

**Algebra** Write a division sentence to solve each exercise.

**19.** The students in Mrs. Jacob's room were in groups of 3. There were 3 groups of boys and 4 groups of girls. How many students were in Mrs. Jacob's class?

_____

**20.** Jorge and Vic save stamps from South America. They have divided their stamps equally among 4 pages of an album. There are 9 stamps on each page. How many stamps do they have?

_____

**21.** A group of third-grade students went to the zoo. Each parent was in charge of 5 students. If there were 7 parents, how many students were there?

_____

**Test Prep** Circle the correct letter for the answer.

**22.** Sal delivered newspapers every day of the week. He delivered 45 papers each weekday and 60 papers on Sunday. Each week he earned $21. How much did Sal earn each day? Which number sentence would you use to solve the problem?

    **A** 45 + 60          **B** $21 × 5          **C** $21 − 7          **D** $21 ÷ 7

# Dividing by 10

**Algebra** Find each missing factor. Use it to help you divide.

**1.** 10 × _____ = 30          **2.** 10 × _____ = 80          **3.** 10 × _____ = 10

   30 ÷ 10 = _____             80 ÷ 10 = _____             10 ÷ 10 = _____

**4.** 70 ÷ 10 = _____          **5.** 20 ÷ 10 = _____          **6.** 50 ÷ 10 = _____

**7.** 30 ÷ 10 = _____          **8.** 60 ÷ 10 = _____          **9.** 0 ÷ 10 = _____

**10.** 80 ÷ 10 = _____          **11.** 10 ÷ 10 = _____          **12.** 40 ÷ 10 = _____

**13.** Wendy has 80 straws. It takes 10 straws to make one straw
sculpture. How many sculptures can she make with the 80 straws?

_____

**14.** There are 100 yards on a football field. Lines are drawn on the
field every 10 yards. How many sections will the field be divided into?

_____

**Test Prep** Circle the correct letter for each answer.

At the Green Thumb Flower Shop, there were 30 roses and 60 carnations.
These flowers were placed into vases. Ten flowers were placed in each vase.
Only one kind of flower was placed in a vase.

**15.** How many more vases of
carnations were there than
vases of roses?

**16.** How many vases were filled
with flowers altogether?

   **A** 2 more vases

   **B** 3 more vases

   **C** 4 more vases

   **D** 5 more vases

   **F** 8 vases

   **G** 9 vases

   **H** 10 vases

   **J** 11 vases

Name _____

# Dividing by 9

**Algebra** Find each missing factor. Use it to help you divide.

**1.** $9 \times$ _____ $= 81$     **2.** $9 \times$ _____ $= 0$     **3.** $9 \times$ _____ $= 54$

$81 \div 9 =$ _____     $0 \div 9 =$ _____     $54 \div 9 =$ _____

**4.** $9\overline{)27}$     **5.** $9\overline{)72}$     **6.** $9\overline{)45}$     **7.** $9\overline{)81}$     **8.** $9\overline{)9}$

**9.** $9\overline{)36}$     **10.** $9\overline{)63}$     **11.** $9\overline{)18}$     **12.** $9\overline{)0}$     **13.** $9\overline{)54}$

**Algebra** Complete each table.

**14.** Rule: Divide by 8.     **15.** Rule: Divide by 9.     **16.** Rule: Divide by 5.

| Input | Output |
|-------|--------|
| 16 | |
| 40 | |
| 64 | |
| 72 | |

| Input | Output |
|-------|--------|
| 9 | |
| 45 | |
| 63 | |
| 81 | |

| Input | Output |
|-------|--------|
| 15 | |
| 25 | |
| | 7 |
| | 8 |

**17.** The farmer collected 63 ears of corn. He packed them in bags of 9. How many bags does he have ready for market? _____

**18.** Rogelio and Dirk collect pictures of United States flags. Rogelio has 18 pictures, and Dirk has 27 pictures. They put 9 pictures in a row on the class bulletin board. How many rows will they have? _____

**19. Mental Math** What related multiplication fact would you use to help you divide $81 \div 9$? _____

**Test Prep** Circle the correct letter for the answer.

**20.** The Lee family drove 36 hours to get to their vacation resort. They drove 9 hours per day. How many days did the trip take?

**A** 2 days     **B** 3 days     **C** 4 days     **D** 5 days

Name _____

## Problem-Solving Strategy
# Write a Number Sentence
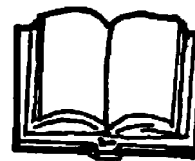
Write a number sentence to solve each problem.

**1.** Angie puts books on shelves for a book fair. She puts 8 books on each shelf. She fills 4 shelves with books. How many books does Angie put on the shelves?

_____

**2.** Angie puts books in cartons. She has 24 books and 4 cartons. Each carton holds the same amount. How many books does she put in each carton?

_____

**3.** Angie's school sells 60 animal books and 19 puzzle books. How many more animal books than puzzle books are sold?

_____

**4.** Angie collects $15 in all for 5 books. The cost of each book is the same. How much does each book cost?

_____

**5.** Soni buys a book with 32 pages. Raul buys a book with 15 more pages than Soni's. How many pages does Raul's book have?

_____

**6.** There are 21 students waiting in line to buy a book. There are 3 clerks collecting money. Each clerk helps the same number of students. How many students does each clerk help?

_____

**7.** Book covers are on sale for $2. Rich buys 9 covers. How much does Rich pay?

_____

**8.** Carrie buys a book for $8. Mia buys one for $9. How much was their total bill?

_____

# Dividing by 4

**Algebra**  Find the missing factor. Use it to help you divide.

**1.** 4 × ____ = 32

32 ÷ 4 = ____

**2.** 4 × ____ = 12

12 ÷ 4 = ____

**3.** 4 × ____ = 36

36 ÷ 4 = ____

**4.** 4 × ____ = 24

24 ÷ 4 = ____

**5.** 4 × ____ = 20

20 ÷ 4 = ____

**6.** 4 × ____ = 4

4 ÷ 4 = ____

**7.** 4)$\overline{28}$

**8.** 4)$\overline{4}$

**9.** 4)$\overline{16}$

**10.** 4)$\overline{24}$

**11.** 16 ÷ 4 = ____

**12.** 8 ÷ 4 = ____

**13.** 12 ÷ 4 = ____

**14.** 24 ÷ 4 = ____

**15.** 32 ÷ 4 = ____

**16.** 28 ÷ 4 = ____

**17.** There are 4 hot-dog buns in a package. If the hot-dog vendor needs 12 buns, how many packages should he buy?

_____

**18. Math Reasoning**  Suppose the hot-dog vendor sold 36 hot-dogs for lunch. How many packages of hot-dog buns did he need to buy?

**Test Prep**  Circle the correct letter for each answer.

At the butcher shop there were 32 chicken legs in packages of 4. During the day, the butcher sold 5 packages.

**19.** How many packages of chicken legs did the butcher have for sale?

**A** 3 packages

**B** 4 packages

**C** 7 packages

**D** 8 packages

**20.** How many chicken legs did the butcher not sell by the end of the day?

**F** 8 legs

**G** 12 legs

**H** 16 legs

**J** 20 legs

# Missing Factors

Find each missing factor.

**1.** 5 × _____ = 45      **2.** 6 × _____ = 48      **3.** 2 × _____ = 10

**4.** _____ × 3 = 24      **5.** 9 × _____ = 54      **6.** _____ × 10 = 60

**7.** 7 × _____ = 21      **8.** 9 × _____ = 36      **9.** 7 × _____ = 28

**10.** _____ × 6 = 36      **11.** 4 × _____ = 32      **12.** 9 × _____ = 0

Write a multiplication sentence to solve each problem.

**13.** The class did 15 science experiments during a 5-day week. They did the same number of experiments each day. How many experiments did they do each day?

_____

**14.** If 27 new wheels were put on 9 airplanes, how many wheels went on each airplane?

_____

**15. Math Reasoning**  How do you know the missing factor in
6 × ☐ = 42 is less than 8?

_____

Find the missing factor and tell whether it is odd or even.

**16.** 7 × ☐ = 49 _____      **17.** 8 × ☐ = 64 _____

**Test Prep**  Circle the correct letter for the answer.

**18.** Gary made a book of endangered animals. He knew about 80 animals but found only 63 pictures of these animals. He placed 9 endangered animals on each page. How many pages did he fill with pictures?

     **A** 17 pages      **B** 7 pages      **C** 9 pages      **D** 24 pages

# Multiplying by 6

Use the first fact to help you multiply the second fact.

**1.** $7 \times 3 =$ _____ **2.** $8 \times 3 =$ _____ **3.** $3 \times 3 =$ _____ **4.** $4 \times 3 =$ _____

$7 \times 6 =$ _____ $8 \times 6 =$ _____ $3 \times 6 =$ _____ $4 \times 6 =$ _____

**5.**   $\begin{array}{r} 5 \\ \times\, 6 \\ \hline \end{array}$
**6.**   $\begin{array}{r} 1 \\ \times\, 6 \\ \hline \end{array}$
**7.**   $\begin{array}{r} 0 \\ \times\, 6 \\ \hline \end{array}$
**8.**   $\begin{array}{r} 9 \\ \times\, 6 \\ \hline \end{array}$

**9.** Fran planted 6 seeds in 5 flowerpots. How many seeds did she plant?

_____

**10.** A lady bug has 6 legs. A spider has 8 legs. There are 4 ladybugs on a leaf. How many legs do the 4 ladybugs have?

_____

**11. Math Reasoning** What is one way to write 18 as the product of two numbers?  What is another way?

_____

_____

**Test Prep**   Circle the correct letter for the answer.

**12.** Amy waits about 6 minutes for each person ahead of her to take a carriage ride. If there are 8 people ahead of her, about how long will Amy wait for her turn?

**A** 36 minutes     **B** 42 minutes     **C** 48 minutes     **D** 54 minutes

**13.** Greg plants 3 rows of corn with 7 plants in each row. Jane plants double that amount. Which expression could represent the amount of corn Jane plants?

**F** $3 \times 7$         **G** $3 \times 6$         **H** $6 \times 7$         **J** $7 \times 3$

**Problem-Solving Strategy**
# Make a Table

Make a table to solve each problem.

**1.** Rita lifts a weight 6 times in 1 minute. How many minutes will it take her to lift the same weight 30 times?

| Number of lifts | | | | | |
|---|---|---|---|---|---|
| Minutes | | | | | |

_____

**2.** Phil does 3 sit-ups on the first day of school. He doubles the number of sit-ups he does every day for 5 days. How many sit-ups will Phil do on the fifth day?

| Days | | | | | |
|---|---|---|---|---|---|
| Sit-ups | | | | | |

_____

**Test Prep** Circle the correct letter for each correct answer.

Yolanda runs 4 miles a day to stay is shape. Read the table and answer the questions below.

| Days | 1 | 2 | 3 | ? | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Miles run | 4 | 8 | 12 | 16 | 20 | 24 | 28 | ? |

**3.** How many days will it take Yolanda to run 16 miles?

   **A** 4 days

   **B** 5 days

   **C** 7 days

   **D** 8 days

**4.** How many miles will Yolanda run In eight days?

   **F** 8 miles

   **G** 24 miles

   **H** 32 miles

   **J** 40 miles

**Problem-Solving Strategy**
# Make a Table

Make a table to solve each problem.

**1.** Rita lifts a weight 6 times in 1 minute. How many minutes will it take her to lift the same weight 30 times?

| Number of lifts | | | | | |
|---|---|---|---|---|---|
| Minutes | | | | | |

_____

**2.** Phil does 3 sit-ups on the first day of school. He doubles the number of sit-ups he does every day for 5 days. How many sit-ups will Phil do on the fifth day?

| Days | | | | | |
|---|---|---|---|---|---|
| Sit-ups | | | | | |

_____

**Test Prep** Circle the correct letter for each correct answer.

Yolanda runs 4 miles a day to stay is shape. Read the table and answer the questions below.

| Days | 1 | 2 | 3 | ? | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Miles run | 4 | 8 | 12 | 16 | 20 | 24 | 28 | ? |

**3.** How many days will it take Yolanda to run 16 miles?

   **A** 4 days

   **B** 5 days

   **C** 7 days

   **D** 8 days

**4.** How many miles will Yolanda run In eight days?

   **F** 8 miles

   **G** 24 miles

   **H** 32 miles

   **J** 40 miles

# Multiplying by 5

Find each product.

1. $5 \times 5 =$ ___        $5 \times 2 =$ ___

     $5 \times 8 =$ ___        $3 \times 5 =$ ___

     $7 \times 5 =$ ___        $5 \times 9 =$ ___

2.

$$\begin{array}{ccccc} 4 & 5 & 10 & 5 & 1 \\ \times\ 5 & \times\ 6 & \times\ 5 & \times\ 9 & \times\ 5 \\ \hline \end{array}$$

---

Find the missing factor.

3. $8 \times$ ___ $= 40$      4. ___ $\times 4 = 20$

5. ___ $\times 10 = 50$      6. ___ $\times 5 = 45$

7. $5 \times$ ___ $= 35$      8. $5 \times$ ___ $= 25$

---

Count by fives. Write the missing numbers.

9. ___ , 15 , ___ , ___ , 30 , ___

10. 35 , ___ , ___ , 50 , ___ , ___

11. ___ , ___ , 50 , 55 , ___ , 65

Name _____

# Multiplying by 2

Find each product.
Remember that doubling can help.

1.   $2 \times 5 = $___        $2 \times 6 = $___

   $2 \times 9 = $___        $2 \times 8 = $___

   $2 \times 7 = $___        $2 \times 3 = $___

2.
$$\begin{array}{r} 7 \\ \times\ 2 \\ \hline \end{array} \qquad \begin{array}{r} 2 \\ \times\ 4 \\ \hline \end{array} \qquad \begin{array}{r} 10 \\ \times\ 2 \\ \hline \end{array} \qquad \begin{array}{r} 9 \\ \times\ 2 \\ \hline \end{array} \qquad \begin{array}{r} 4 \\ \times\ 2 \\ \hline \end{array}$$

Find the missing factor.

3.  $8 \times$___ $= 16$        4.  ___$\times 4 = 8$

5.  ___$\times 10 = 20$        6.  ___$\times 2 = 18$

7.  $2 \times$___ $= 14$        8.  $2 \times$___ $= 10$

Solve.

9.  There were 7 birds in the tree.
    More birds came, and the number doubled.
    How many birds were there in all?

    _____ birds

# Symmetry

Circle the half of the card that shows one of the matching parts.

**1.**
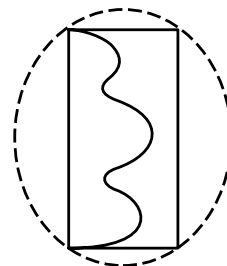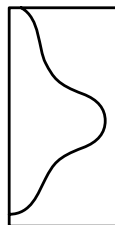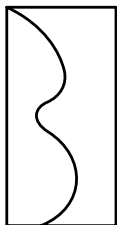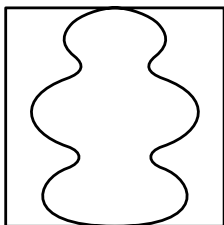
**2.**
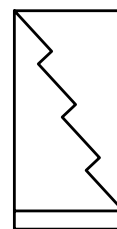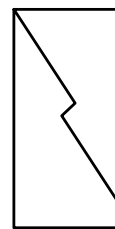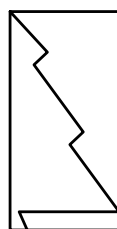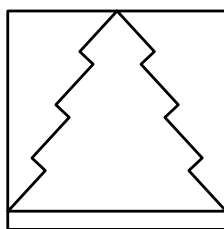
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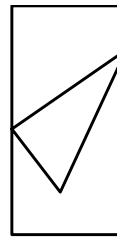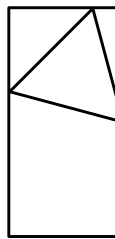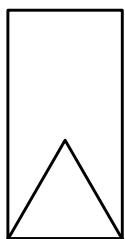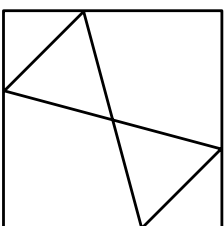
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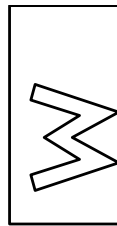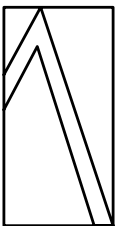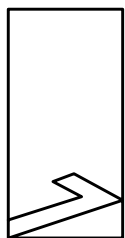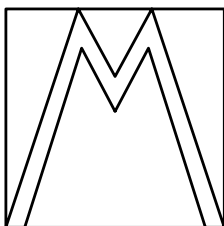
**5.**
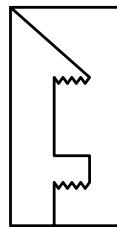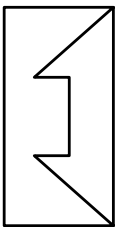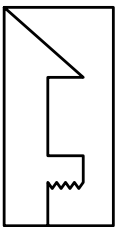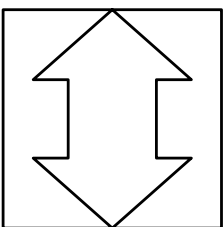
## Creating Situations to Represent Number Sentences

**Examples**

1. Create a situation involving ice cubes to represent the number sentence $4 \times 3 = 12$.

   Multiplication represents the addition of equal-sized groups. The 3 could represent 3 groups and the 4 could represent the number of things in each group or the size of each group. We group ice cubes in glasses. We could have 3 glasses with 4 ice cubes in each glass.

   A situation that could represent the number sentence $4 \times 3 = 12$ is: Sara makes 3 glasses of lemonade and places 4 ice cubes in each glass. She uses 12 ice cubes in all.

2. Create a situation involving markers to represent the number sentence $24 \div 3 = 8$.

   Division represents repeated subtraction. When we begin with the number 24, we can repeatedly subtract the number 3 eight times before we reach a result of zero. We could begin with 24 markers and give 3 away at a time.

   A situation that could represent $24 \div 3 = 8$ is: A teacher has 24 markers to give away. The teacher wants to give 3 markers to each student. The teacher can give markers, 3 at a time, to a total of 8 students.

3. Create a situation involving pencils to represent the number sentence $7 \times \square = 21$, where $\square$ represents the value that students are asked to find.

   Since multiplication represents the addition of equal-sized groups, the number 7 could represent the number of things placed in each group. The $\square$ represents the number of groups we ask the students to find. The 21 represents the number of things we have in all.

   A situation that could represent $7 \times \square = 21$ is: Mr. Anderson has 21 pencils in all. He makes groups of 7 pencils each. How many total groups of pencils can Mr. Anderson make?

*NAME:_____*

**Practice** – Use each context and number sentence to create a situation to represent each number sentence.

1.  Number Sentence: $2 \times 12 = 24$     Context: People on a bus

2.  Number Sentence: $32 \div 8 = 4$     Context: Chairs in a classroom

3.  Number Sentence: $9 \times 12 = 108$     Context: Beads on necklaces

4.  Number Sentence: $6 \times \square = 48$     Context: Pennies in jars

5.  Number Sentence: $52 \div \square = 13$     Context: Cards dealt to players

6.  Number Sentence: $9 \times 7 = \square$     Context: Grapes on snack plates

7.  Number Sentence: $35 \div 5 = \square$     Context: Fish in fish bowls

8.  Number Sentence: $\square \times 10 = 90$     Context: Cupcakes given to friends

9.  Number Sentence: $56 \div \square = 8$     Context: Marbles in bags

10. Number Sentence: $3 \times 6 = 18$     Context: Pieces of yarn used to make bracelets

**Quiz** – Circle the letter that best answers each question.

1. Which situation could be solved using the number sentence: $11 \times 4 = 44$?

    a) There are 4 more boys than 11 girls in a class. There are a total of 44 students.

    b) There are 4 fewer apples than oranges. There are 11 oranges and 44 fruit in all.

    c) There are 4 pieces of fruit placed on each plate. There are 11 plates and 44 fruits in all.

    d) There are 11 pieces of fruit placed on each plate. There are 44 plates and 4 pieces of fruit in all.

2. Which situation could be solved using the number sentence: $8 \div 2 = 4$?

    a) 8 candies are split into 2 equal groups. Each group has 4 candies.

    b) 8 candies are placed on each plate. There are 4 plates and each plate has 2 candies.

    c) There are 2 yellow markers and 4 blue markers. There are 8 markers in all.

    d) There are 4 more yellow markers than blue markers. There are 8 markers in all.

3. Which situation could be solved using the number sentence: $6 \times \square = 42$?

    a) There are 42 pens in all. There are 6 more black pens than red pens.

    b) There are 42 pens in all. There are 6 fewer black pens than red pens.

    c) There are 42 students and 6 tennis balls. How many more students than tennis balls are there?

    d) There are 6 tennis balls in each tennis ball container. If there are 42 tennis balls in all, how many containers are needed?

4. Which situation could **not** be solved using the number sentence: $50 \div \square = 10$?

    a) There are 50 prizes handed out for 10 events. Each event gives away an equal number of prizes. How many prizes are handed out at each event?

    b) There are 10 groups with 50 people in each group. How many people are there in all?

    c) There are 50 students split into equal-sized groups. If there are 10 groups of students, how many students are in each group?

    d) There are 10 keys placed on each key ring. How many key rings are there if there is a total of 50 keys?

5. Which situation could **not** be solved using the number sentence: $6 \times 4 = \square$?

    a) What is the product of 6 and 4?

    b) What is the quotient of 6 and 4?

    c) What is 6 multiplied by 4?

    d) What is 6 times 4?

## Number Sentence Match

**Explanation**

A) A number sentence is an equation or inequality (you will learn about inequalities later) that includes numbers, one or more operation symbols ($+$, $-$, $\times$, $\div$), and an unknown quantity.

B) A variable is a letter or symbol that represents an unknown quantity.

C) We can write number sentences to represent a situation and use them to solve for an unknown quantity.

**Examples**

1. There are 5 candies and each candy costs 12 cents. How much does it cost to buy all 5 candies?

    Sarah writes the number sentence $5 \times 12 = C$ to represent the problem.

    a) What does the variable $C$ represent?
    <span style="color:red">The variable is used to represent the unknown quantity, the number the problem is asking us to find. What are we being asked to find? The cost of 5 candies.
    $C =$ the cost of 5 candies</span>

    b) What does the number 12 represent in the number sentence?
    <span style="color:red">Reread the original word problem and underline the meaning of 12:
       There are 5 candies and <u>each candy costs 12 cents</u>. How much does it
       cost to buy all 5 candies?
    12 represents the cost in cents of each candy.</span>

    c) What does the number 5 represent?
    <span style="color:red">Reread the original word problem and underline the meaning of 5:
       <u>There are 5 candies</u> and each candy costs 12 cents. How much does it
       cost to buy all 5 candies?
    5 represents the number of candies.</span>

    d) What does $\times$ represent?
    <span style="color:red">$\times$ is the multiplication operation and represents the relationship between the numbers in the number sentence. The operation multiply was chosen for the word problem because the cost of 5 candies is
    $12 + 12 + 12 + 12 + 12$ or $5 \times 12$, based on the fact that each candy is 12 cents.</span>

2. A teacher has 24 markers and wants to divide them evenly among 6 students. How many markers does each student get?

Mathew uses the number sentence $24 \div 6 = \square$ to represent the problem.

a) What does $\square$ represent?
The box is used to represent the unknown quantity, the number the problem is asking us to find. What are we being asked to find? The number of markers each student receives.
$\square$ = the number of markers each student receives.

b) What does the number 24 represent?
Reread the problem to determine the meaning of 24.
A teacher has 24 markers and wants to divide them evenly among 6 students. How many markers does each student get?
24 represents the total number of markers the teacher has.

c) What does the number 6 represent?
Reread the problem to determine the meaning of 6.
A teacher has 24 markers and wants to divide them evenly among 6 students. How many markers does each student get?
6 represents the number of students who receive a marker.

**Practice** – Match each number sentence to a problem that could be solved using the number sentence.

1. $8 \times 4 = R$

2. $32 \div 2 = N$

3. $12 \div \square = 4$

4. $4 \times 3 = \square$

5. $9 \times \square = 27$

6. $3 = F \div 9$

7. $5 \times Z = 15$

8. $15 \div 3 = C$

9. $Y \times 8 = 56$

10. $16 \div 2 = \square$

a. Alice earns $12 dollars by selling 4 boxes of cookies. How much did each box of cookies cost?

b. There are 16 customers waiting in line and 2 clerks at cash registers. Each clerk helps the same number of customers. How many customers does each clerk help?

c. There are 8 shelves in a bookcase and 4 books on each shelf. How many books are in the bookcase?

d. Mary earns 27 points after answering 9 questions correctly. If each question is worth the same number of points, how many points was each question worth?

e. Tom places 4 tennis balls in each box. There are 3 boxes. What is the total number of tennis balls that Tom places in all the boxes?

f. Tony buys 8 equally priced pizzas and spends $56 dollars. How much does each pizza cost?

g. Mason sells dinner meals for $5 each and earns $15. How many dinners did Mason sell?

h. Emilia creates 3 equal groups of 15 counting cubes. How many counting cubes are in each group?

i. A coach divides the team members into 3 groups with 9 players in each group. How many players are on the team?

j. There are 32 students in a class. The class is split into 2 even teams. How many students are on each team?

## **Quiz**

1. Book covers are on sale for $2. Paula buys 9 covers. How much does Paula pay?

   Paula uses this number sentence to solve the problem: $2 \times 9 = B$

   What does the variable represent?

   a)  The amount Paula pays

   b)  The cost of each book cover

   c)  The number of book covers Paula buys

   d)  The number of books Paula needs to cover

2. Sean passes out an equal number of marbles to each of the 30 students in the class. If each student is given 5 marbles, how many markers did Sean pass out?

   Sean begins to write a number sentence to solve the problem: $30 \_ 5 = M$

   Which operation goes in ___?

   a) +        b) −          c) ×          d) ÷

3. Which problem could be represented by the number sentence: $2 \times 3 = \square$

   a)  What number times 2 is 3?

   b)  What number multiplied by 3 is 2?

   c)  What number is the quotient of 2 and 3?

   d)  What number is the product of 2 and 3?

4. Which problem could be used to represent the number sentence $81 \div 9 = \square$

   a)  Rob begins with 81 cents and then spends 9 cents. How many cents does Rob have now?

   b)  Lilly spends 81 dollars on 9 copies of the same book. What is the cost of each book?

   c)  Jo earns 81 points on a test and then receives 9 bonus points. What is the total number of points that Jo earns?

    d) Marge makes 81 cookies for each of her 9 friends' birthday parties. How many cookies does Marge make altogether?

5. Four friends go out to dinner and split the $24 bill evenly. How much does each friend contribute to the bill?

The problem can be solved using the number sentence: $24 \div 4 = C$

What does the variable represent?

    a) The cost of the bill

    b) The cost of each meal

    c) The amount each friend paid

    d) The number of friends sharing the bill

   

## Displaying Data in Venn Diagrams 2

**Example**

Zoe took a field trip to a farm. She made the following Venn diagram. Read the diagram and answer the questions below by writing "True" or "False" in the blank provided. If "False," give a reason.

Things on the Farm

*cornfield*

*tractor*

Things with Legs

Things that are Brown

*cat*

*horse*

*cow*

*old car*

*fence*

*table*

*barn*

*water pump*
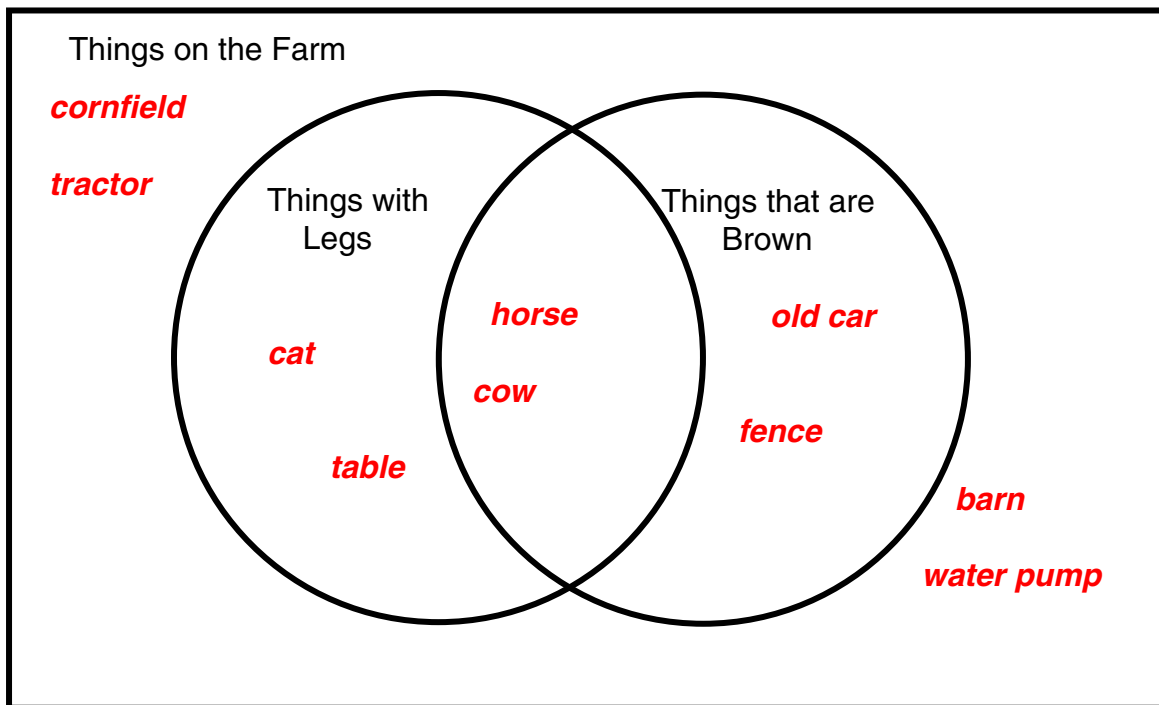
According to the diagram …

1. Both the fence and the cow were brown.  **True**

2. Both the cat and the horse had legs and were brown.  **False, the cat is not in the circle for Things that are Brown.**

3. Neither the cornfield nor the barn was brown.  **True**

4. Both the horse and cow were brown and had legs.  **True**

5. The tractor and the old car were brown.  **False, the tractor is not in the circle for Things that are Brown.**

6. The water pump was not on the farm.  **False, the water pump is inside the rectangle of Things on the Farm.**

7. The cat and the table are the only things on the farm that have legs.  **False, the horse and cow are also in the circle for Things with Legs.**

1

## Problem 1

Matthew and Hailey started putting some of the state names of the United States into the following Venn diagram. Read the diagram and fill in each blank with one state name from the list provided below. The state names Matthew and Hailey used have been crossed off the list.

State Names of the United States

*Florida*

*California*

**North Carolina**

State Names that start with a vowel

State Names with fewer than than 6 letters

*Iowa*

*Alaska*

*Maine*

*Idaho*

*Oregon*

*Ohio*

1._____

2._____

3._____

4._____

5._____

*Wyoming*
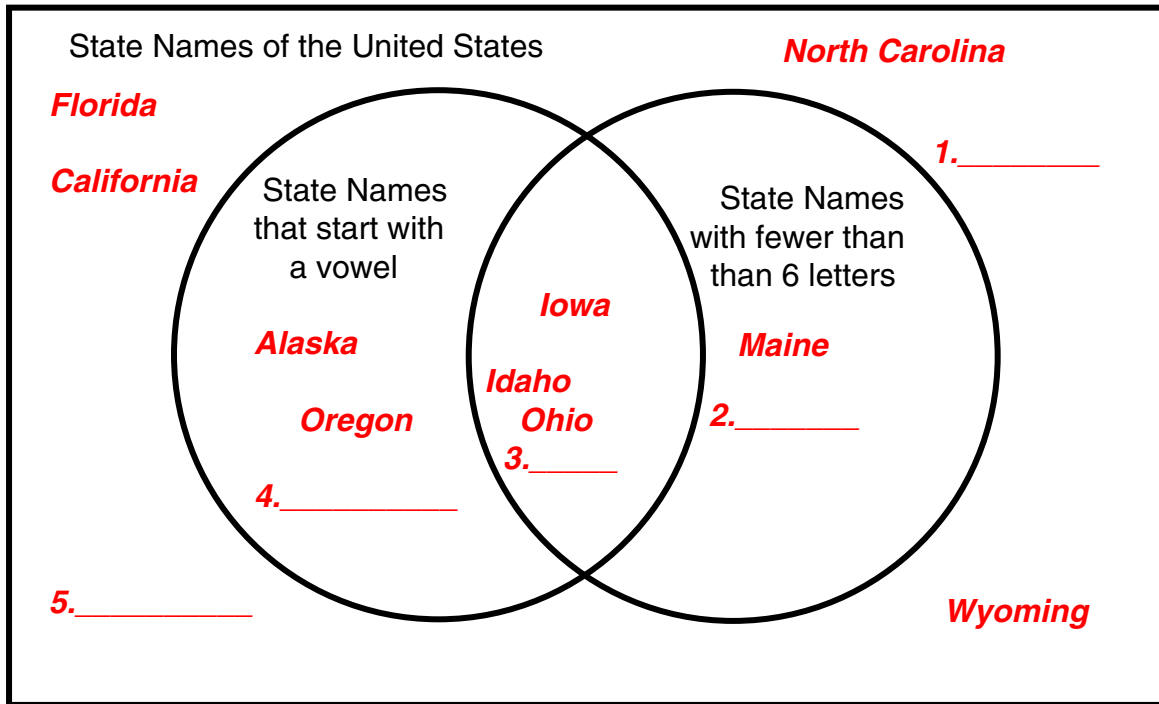
State Name List:

| | | |
|---|---|---|
| Alabama | Louisiana | ~~Ohio~~ |
| ~~Alaska~~ | ~~Maine~~ | Oklahoma |
| Arizona | Maryland | ~~Oregon~~ |
| Arkansas | Massachusetts | Pennsylvania |
| ~~California~~ | Michigan | Rhode Island |
| Colorado | Minnesota | South Carolina |
| Connecticut | Mississippi | South Dakota |
| Delaware | Missouri | Tennessee |
| ~~Florida~~ | Montana | Texas |
| Georgia | Nebraska | Utah |
| Hawaii | Nevada | Vermont |
| ~~Idaho~~ | New Hampshire | Virginia |
| Illinois | New Jersey | Washington |
| Indiana | New Mexico | West Virginia |
| ~~Iowa~~ | New York | Wisconsin |
| Kansas | ~~North Carolina~~ | ~~Wyoming~~ |
| Kentucky | North Dakota | |

**Problem 2**

Ethan, Lloyd, and Paige played a game with the following numbers:

| 80 | 229 | 88 | 130 | 133 | 49 | 140 |
|----|-----|----|-----|-----|----|-----|
| 256 | 298 | 96 | 210 | 176 | 6 | 22 |
| 227 | 219 | 73 | 241 | 297 | 40 | 5 |
| 77 | 2 | 89 | 30 | 180 | 300 | 19 |
| 70 | 200 | 271 | 268 | 1 | 168 | 183 |

Fill in the following Venn diagram.

Game Numbers

Even
numbers

Numbers that
end in zero

Three-digit
numbers

3

## Displaying Data in Venn Diagrams 1

**Example**

Kay and Jeff each chose numbers from the data set {0, 1, 2, 3, 4, 5, 6, 7, 8, 9}. Kay chose 1, 0, 3, 8, and 5. Jeff chose 1, 2, 9, 0, 5, and 6. In the following Venn diagram, display the data set, display Kay's numbers, and Jeff's numbers, then answer the questions below.

Numbers in the Data Set

*4*

*7*

Kay's
Numbers

Jeff's
Numbers

*3*
*8*

*1*

*2*

*9*

*0*
*5*

*6*

1. Write Kay's set of numbers. __**{0, 1, 3, 5, 8}**__

2. Write Jeff's set of numbers. __**{0, 1, 2, 5, 6, 9}**__

3. List the numbers only Kay chose. __**3 and 8**__

4. List the numbers only Jeff chose. __**2, 6, and 9**__

5. List the numbers both Kay and Jeff chose. __**0, 1 and 5**__

6. List the numbers not chosen by Kay or Jeff. __**4 and 7**__

**Problem 1**

Max, Lizzy, and Joe were playing a game. They each chose numbers from 0 to 30. Max chose 4, 0, 9, 11, and 27. Lizzy chose 7, 4, 10, 13, 8, and 5. Joe chose 3, 22, 4, 30, 25, 16, 9, and 8. Put the information and appropriate labels in the following Venn diagram, then answer the questions below.



1.    Write Max's set of numbers. _____

2.    Write Lizzy's set of numbers. _____

3.    Write Joe's set of numbers. _____

4.    List the numbers only Max chose. _____

5.    List the numbers only Lizzy chose. _____

6.    List the numbers only Joe chose. _____

7.    List the numbers both Max and Lizzy chose. _____

8.    List the numbers both Lizzy and Joe chose. _____

9.    List the numbers both Joe and Max chose. _____

10.   List the numbers chosen by all three players. _____

11.   List the numbers not chosen by any of the players. _____

**Problem 2**

Nicholas made the following Venn diagram to display some of the items he saw while on vacation. Read the diagram and answer the questions below by writing "True" or "False" or "Unknown" in the blank provided. If "False," give a reason.

Things Nicholas Saw on Vacation

*picnic table*

*mountain*

*book*

*road sign*

*deer*

Things with Wheels

Things that are Blue

*camper*

*train*

*tricycle*

*truck*

*car*

*horse trailer*

*sky*

*tent*

*water tower*

*old bicycle*

*tree*

*sand*

*sunflower*

*Mount Rushmore*

According to the diagram…

1.  The tricycle was blue. _____

2.  The horse trailer had wheels. _____

3.  The picnic table was blue. _____

4.  The deer was near the road sign. _____

5.  The old bicycle did not have wheels. _____

6.  Both the train and the car had wheels and were blue. _____

7.  Neither the tree nor the water tower was blue. _____

8.  The road sign did not have wheels and it wasn't blue. _____

9.  Neither the tent nor the sand had wheels. _____

10. Nicholas did not see a mountain while on vacation. _____

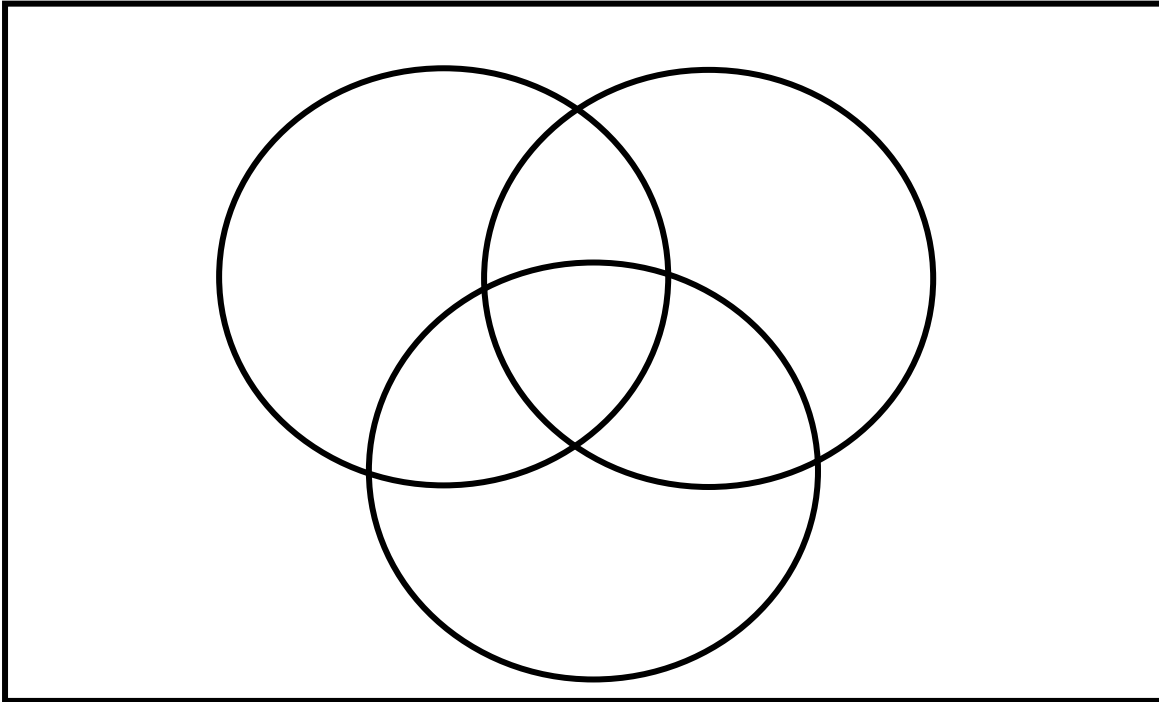NAME:_____

## Displaying Data in Venn Diagrams 1

**Example**

Kay and Jeff each chose numbers from the data set {0, 1, 2, 3, 4, 5, 6, 7, 8, 9}. Kay chose 1, 0, 3, 8, and 5. Jeff chose 1, 2, 9, 0, 5, and 6. In the following Venn diagram, display the data set, display Kay's numbers, and Jeff's numbers, then answer the questions below.

Numbers in the Data Set

*4*

*7*

Kay's
Numbers

Jeff's
Numbers

*3*

*8*

*1*

*2*

*9*

*0*

*5*

*6*

1.  Write Kay's set of numbers. ____**{0, 1, 3, 5, 8}**____

2.  Write Jeff's set of numbers.____**{0, 1, 2, 5, 6, 9}**____

3.  List the numbers only Kay chose.____**3 and 8**____

4.  List the numbers only Jeff chose.____**2, 6, and 9**____

5.  List the numbers both Kay and Jeff chose.____**0, 1 and 5**____

6.  List the numbers not chosen by Kay or Jeff.____**4 and 7**____
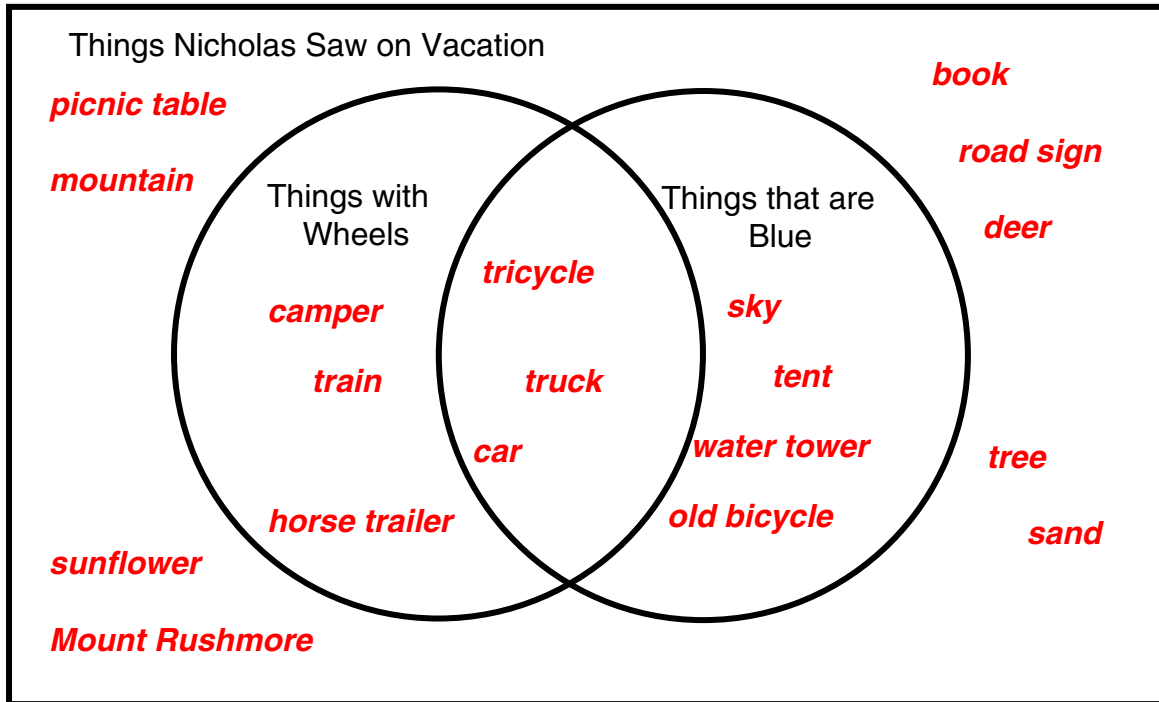
## **Problem 1**

Max, Lizzy, and Joe were playing a game. They each chose numbers from 0 to 30. Max chose 4, 0, 9, 11, and 27. Lizzy chose 7, 4, 10, 13, 8, and 5. Joe chose 3, 22, 4, 30, 25, 16, 9, and 8. Put the information and appropriate labels in the following Venn diagram, then answer the questions below.



1.  Write Max's set of numbers. _____

2.  Write Lizzy's set of numbers. _____

3.  Write Joe's set of numbers. _____

4.  List the numbers only Max chose. _____

5.  List the numbers only Lizzy chose. _____

6.  List the numbers only Joe chose. _____

7.  List the numbers both Max and Lizzy chose. _____

8.  List the numbers both Lizzy and Joe chose. _____

9.  List the numbers both Joe and Max chose. _____

10. List the numbers chosen by all three players. _____

11. List the numbers not chosen by any of the players. _____

**Problem 2**

Nicholas made the following Venn diagram to display some of the items he saw while on vacation. Read the diagram and answer the questions below by writing "True" or "False" or "Unknown" in the blank provided. If "False," give a reason.

Things Nicholas Saw on Vacation

book

picnic table

road sign

mountain

Things with Wheels

Things that are Blue

deer

tricycle

camper

sky

train

truck

tent

car

water tower

tree

horse trailer

old bicycle

sand

sunflower

Mount Rushmore
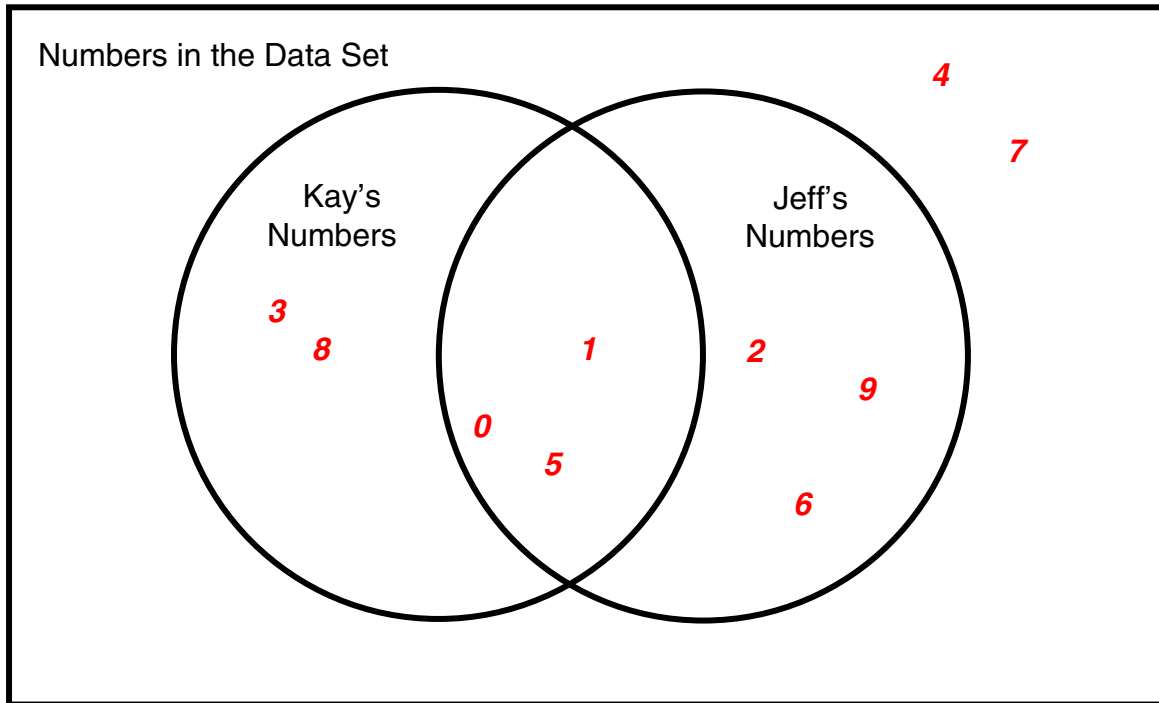
According to the diagram…

1. The tricycle was blue. _____

2. The horse trailer had wheels. _____

3. The picnic table was blue. _____

4. The deer was near the road sign. _____

5. The old bicycle did not have wheels. _____

6. Both the train and the car had wheels and were blue. _____

7. Neither the tree nor the water tower was blue. _____

8. The road sign did not have wheels and it wasn't blue. _____

9. Neither the tent nor the sand had wheels. _____

10. Nicholas did not see a mountain while on vacation. _____

# Representing Data on a Timeline – Fill in the Missing Date
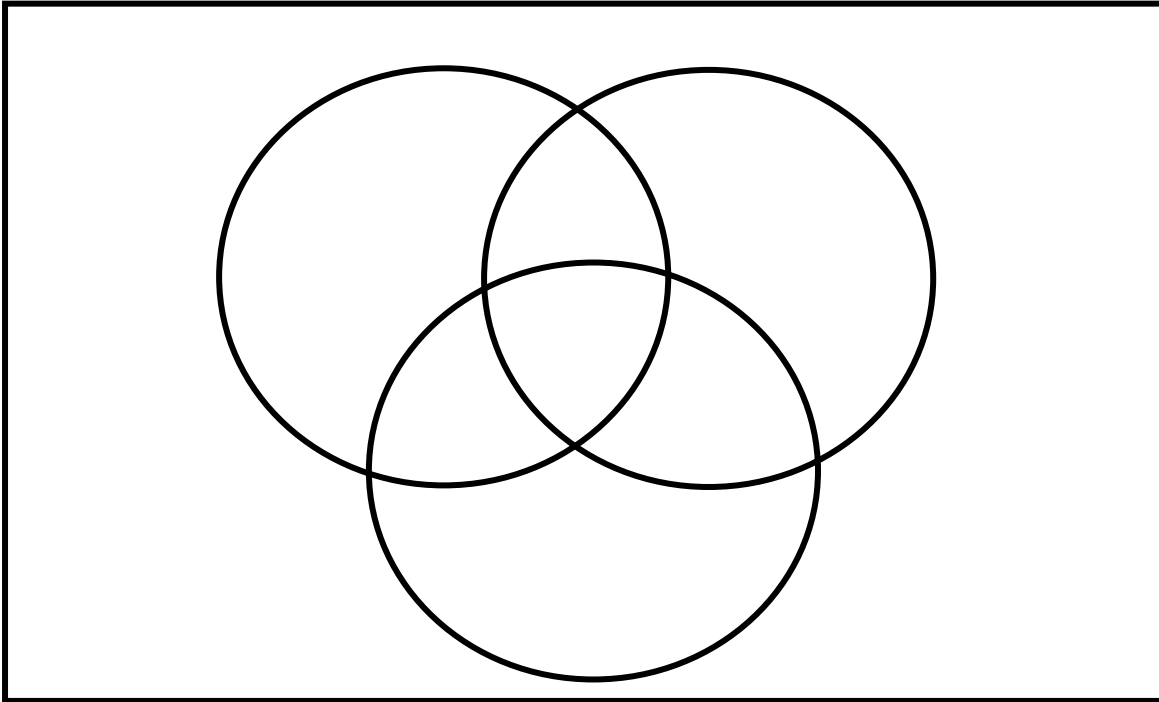
## Explanation

A) A number line shows values at the correct distances and in order.

B) A timeline is a number line that shows dates, usually years.

C) Your task in this activity is to fill in the missing date on each given timeline.

    a. One way to do this is to:

        i. Find the two nearest marked dates below the timeline.

        ii. Make marks for each year between the two nearest marked dates.

        iii. Use the marks to count up or count down to find the missing date.

    b. Another way is to:

        i. Find the two nearest marked dates below the timeline.

        ii. Estimate the nearest halfway date.

        iii. Make marks for each year between the nearest marked date and the halfway date.

        iv. Use the marks to count up or count down to find the missing date.

## Examples – Write the missing dates in the blanks to the right of each timeline.

1.



2005  2015  2025  2035  2045  2055  2065  2075  2085

1. **2008**

**The missing date is between marked dates 2005 and 2015.**
**Make marks for each year 2005 to 2015. The missing date is 2008.**

2.



1340     1350     1360     1370     1380     1390

2. **1353**

**The missing date is between marked date 1350 and halfway date 1355.**
**Make marks for each year 1350 to 1355. The missing date is 1353.**
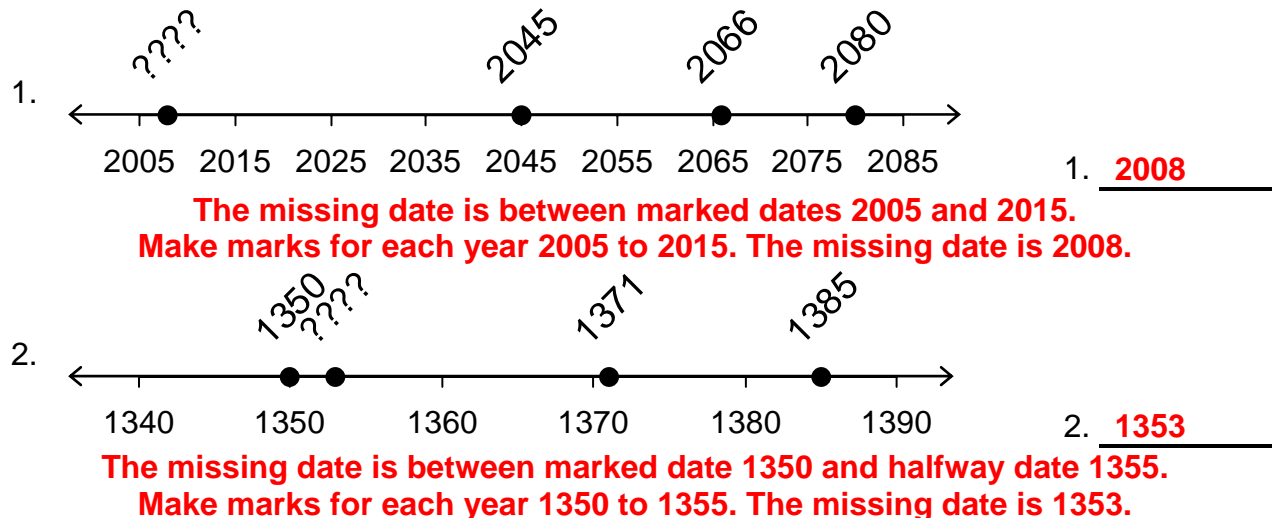
**Practice** – **Write the missing dates in the blanks to the right of each timeline.**

1.

2336  2343  ????  2377

| 2330 | 2340 | 2350 | 2360 | 2370 | 2380 | 2390 | 2400 |

1. _____

2.

1923  ????  1979  1993

| 1900 | 1925 | 1950 | 1975 | 2000 |

2. _____

3.

1441  1453  ????  1464

| 1440 | 1450 | 1460 | 1470 |

3. _____

4.

1806  1837 1842  ????

| 1800 | 1820 | 1840 | 1860 | 1880 | 1900 |

4. _____

5.

????  1656  1667  1697

| 1600 | 1625 | 1650 | 1675 | 1700 |

5. _____

6.

1720  ????  1780  1794

| 1720 | 1740 | 1760 | 1780 | 1800 |

6. _____

## Quiz

1.

1533     1544 ????     1584

| 1530 | 1540 | 1550 | 1560 | 1570 | 1580 | 1590 |

1. _____

2.

2217     2259     2281 ????

| 2210 | 2225 | 2240 | 2255 | 2270 | 2285 | 2300 |

2. _____

3.

1929  1941     ????     1993

| 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 | 2000 |

3. _____

# Rounding Decimals to the Tenths Place – True False

## Examples

If the statement about rounding to the tenths place is true, write a T in the blank.
If the statement is false, write the correctly rounded decimal in the blank.

1. 3869.61 rounded to the tenths place is 3869.7      1.   **3869.6**

2. 93.4273 rounded to the tenths place is 93.4      2.    **T**

3. 3431.97 rounded to the tenths place is 3431.9      3.    **3432**

## Practice

If the statement about rounding to the tenths place is true, write a T in the blank.
If the statement is false, write the correctly rounded decimal in the blank.

1. 84.2821 rounded to the tenths place is 84.3      1._____

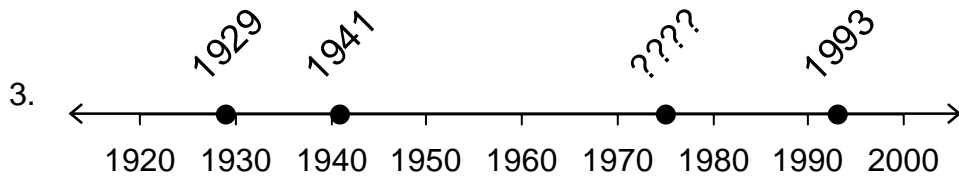2. 112.5493 rounded to the tenths place is 112.6      2._____

3. 269.132 rounded to the tenths place is 269.2      3._____

4. 75.454 rounded to the tenths place is 75.4      4._____

5. 2996.57 rounded to the tenths place is 2996.5      5._____

6. 107.9855 rounded to the tenths place is 107.9      6._____

7. 1784.14 rounded to the tenths place is 1784.1      7._____

8. 87.8495 rounded to the tenths place is 87.9      8._____

9. 8659.72 rounded to the tenths place is 8659.7      9._____

10. 91.5795 rounded to the tenths place is 91.5      10._____

11. 347.106 rounded to the tenths place is 347.1      11._____

12. 61.3258 rounded to the tenths place is 61.3      12._____

13. 9678.69 rounded to the tenths place is 9678.6      13._____

14. 69.732 rounded to the tenths place is 69.7      14._____

15.  5469.72 rounded to the tenths place is 5469.8          15._____

16.  124.1843 rounded to the tenths place is 124.2          16._____

17.  8585.117 rounded to the tenths place is 8585.2          17._____

18.  64.87 rounded to the tenths place is 64.8          18._____

19.  9372.63 rounded to the tenths place is 9372.7          19._____

20.  98.2955 rounded to the tenths place is 98.2          20._____


**Quiz**

1.  2437.13 rounded to the tenths place is 2437.2          1._____

2.  61.3365 rounded to the tenths place is 61.4          2._____

3.  2926.93 rounded to the tenths place is 2926.9          3._____

4.  115.9631 rounded to the tenths place is 115.9          4._____

5.  4370.134 rounded to the tenths place is 4370.2          5._____

6.  143.3684 rounded to the tenths place is 143.4          6._____

NAME:_____

# Rounding Decimals to the Tenths Place – True False

**Examples**

If the statement about rounding to the tenths place is true, write a T in the blank.
If the statement is false, write the correctly rounded decimal in the blank.

1. 3869.61 rounded to the tenths place is 3869.7          1. **3869.6**

2. 93.4273 rounded to the tenths place is 93.4          2. **T**

3. 3431.97 rounded to the tenths place is 3431.9          3. **3432**

**Practice**

If the statement about rounding to the tenths place is true, write a T in the blank.
If the statement is false, write the correctly rounded decimal in the blank.

1. 84.2821 rounded to the tenths place is 84.3          1._____

2. 112.5493 rounded to the tenths place is 112.6          2._____

3. 269.132 rounded to the tenths place is 269.2          3._____

4. 75.454 rounded to the tenths place is 75.4          4._____

5. 2996.57 rounded to the tenths place is 2996.5          5._____

6. 107.9855 rounded to the tenths place is 107.9          6._____

7. 1784.14 rounded to the tenths place is 1784.1          7._____

8. 87.8495 rounded to the tenths place is 87.9          8._____

9. 8659.72 rounded to the tenths place is 8659.7          9._____

10. 91.5795 rounded to the tenths place is 91.5          10._____

11. 347.106 rounded to the tenths place is 347.1          11._____

12. 61.3258 rounded to the tenths place is 61.3          12._____

13. 9678.69 rounded to the tenths place is 9678.6          13._____

14. 69.732 rounded to the tenths place is 69.7          14._____

15.  5469.72 rounded to the tenths place is 5469.8          15._____

16.  124.1843 rounded to the tenths place is 124.2          16._____

17.  8585.117 rounded to the tenths place is 8585.2          17._____

18.  64.87 rounded to the tenths place is 64.8          18._____

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**Quiz**

1.  2437.13 rounded to the tenths place is 2437.2          1._____

2.  61.3365 rounded to the tenths place is 61.4          2._____

3.  2926.93 rounded to the tenths place is 2926.9          3._____

4.  115.9631 rounded to the tenths place is 115.9          4._____

5.  4370.134 rounded to the tenths place is 4370.2          5._____

6.  143.3684 rounded to the tenths place is 143.4          6._____

## Representing Data on a Timeline

### Explanation

A) A number line shows values at the correct distances and in order.

B) A timeline is a number line that shows dates, usually years.

C) To draw a timeline for given dates:

- ✓ choose a start date and an end date (you may have to round up or down)
- ✓ choose a length of time for each mark (1, 2, 5, or 10 years, for example)
- ✓ choose a measurement (centimeters or half-inches often work nicely)
- ✓ draw a line longer than the total distance needed; put arrows at each end
- ✓ mark distances to match the chosen time for each mark
- ✓ place dots and labels to match the given dates; label the start and end, too.

### Examples

1. Draw a timeline that shows the years 1955, 1954, 1951, and 1958.
   **start date: 1950**              **end date: 1960**
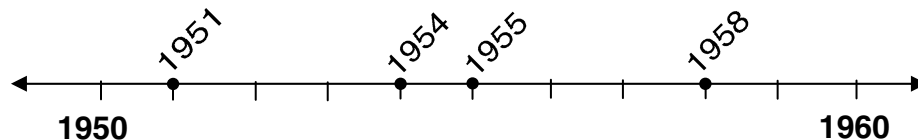   **time for each mark: 1 year**    **number of marks needed: 10+1**
   **measurement: 1 centimeter**     **length of line: 12 centimeters**
   **Draw a line 12 cm long, mark every 1 cm, place an arrow at each end.**
   **Below the line, label at least the marks for the start and end dates.**
   **Each mark shows 1 year. Place dots and labels to match the given years.**



2. Draw a timeline that shows the years 1960, 1962, 1935, and 1968.
   **start date: 1930**              **end date: 1970**
   **time for each mark: 5 years**   **number of marks needed: 8+1**
   **measurement: 1 half-inch**      **length of line: 5 inches**
   **Draw a line 5 inches long, mark every half-inch, place an arrow at each end.**
   **Below the line, label at least the marks for the start and end dates.**
   **Each mark shows 5 years. When there is no mark to match a given year,**
   **divide the distance into equal parts so that each part represents 1 year.**
   **Place dots and labels to match the given years.**



1
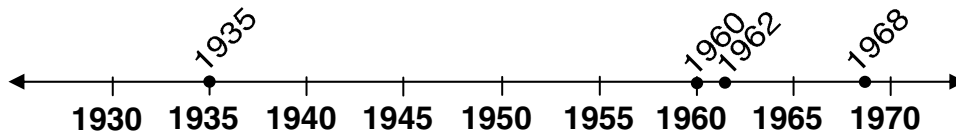
NAME:_____

**Practice** – Use your own paper if needed.

1.  Draw a timeline that shows the years 1693, 1699, and 1681.
    **start date:** _____          **end date:** _____
    **time for each mark:** _____   **number of marks needed:** _____
    **measurement:** _____         **length of line:** _____

2.  Draw a timeline that shows the years 1879, 1877, 1868, 1874, and 1867.
    **start date:** _____          **end date:** _____
    **time for each mark:** _____   **number of marks needed:** _____
    **measurement:** _____         **length of line:** _____

3.  Draw a timeline that shows the years 1777, 1741, 1736, 1776, and 1723.
    **start date:** _____          **end date:** _____
    **time for each mark:** _____   **number of marks needed:** _____
    **measurement:** _____         **length of line:** _____

4.  Draw a timeline that shows the years 1344, 1339, 1364, and 1321.
    **start date:** _____          **end date:** _____
    **time for each mark:** _____   **number of marks needed:** _____
    **measurement:** _____         **length of line:** _____

NAME:_____

## Quiz

1.  Draw a timeline that shows the years 2067, 2041, and 2059.

2.  Draw a timeline that shows the years 1868, 1871, 1874, and 1866.

3.  Draw a timeline that shows the years 1739, 1764, 1711, 1767, and 1727.

# Reading and Writing Decimals Millions to Millionths

## Explanation

A) The value of a digit depends on its position in a number. This position is called its *place value*.

B) Each place value refers to a group of ten of the place value to its immediate right. The tens place refers to a group of ten ones. The hundreds place refers to a group of ten tens.

C) The place value names to the left of the decimal point end in "s".
   The place value names to the right of the decimal point end in "ths".

D) Use "and" to represent the position of the decimal point.

E) Zeros are used as placeholders.

F) The following table shows place value names from millions to millionths.

| millions | hundred thousands | ten thousands | thousands | hundreds | tens | ones | . | tenths | hundredths | thousandths | ten thousandths | hundred thousandths | millionths |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  | . |  |  |  |  |  |  |

## Examples

1. What is the place value of the 7 in the number 178,563.82?
   **The 7 is in the ten thousands place.**

   _____

2. What digit is in the ten thousandths place in the number 82,753.6194?
   **The digit in the ten thousandths place is 4.**

   _____

3. Write 72.7268 in words.
   **seventy-two and seven thousand, two hundred sixty-eight millionths**

   _____

**Practice**

1. Write the place value of the 7 in the following numbers.

a) 2,530,673.183  _____

b) 3,560,262.573951  _____

c) 842,551.14547  _____

d) 11,151.2572  _____

e) 7,536,465.64  _____

f) 72,445.12014  _____

g) 1,046.461738  _____

h) 622.850837  _____

i) 4,528,327  _____

j) 504,526.7632  _____

k) 6,750,881.233  _____

l) 7,033.4  _____

m) 8,715.42606  _____

2. Use the number 2,381,749.085617 for the following questions.

a) What digit is in the hundred thousands place?      _____

b) What digit is in the hundred thousandths place?      _____

c) What digit is in the hundredths place?      _____

d) What digit is in the hundreds place?      _____

e) What digit is in the ten thousandths place?      _____

f) What digit is in the ten thousands place?      _____

g) What digit is in the millions place?      _____

h) What digit is in the millionths place?      _____

i) What digit is in the thousandths place?      _____

j) What digit is in the thousands place?      _____

k) What digit is in the tens place?      _____

l) What digit is in the tenths place?      _____

m) What digit is in the ones place?      _____

3.  Write the following numbers in words.

a)   175.202

b)   3,758,104.53

c)   422,615

d)   0.437564

e)   1,735,210

f)   7.10026

g)   27.7135

h)   4,402.17226

i)   67,734.5348

j)   7,335.88

k)   72,055.8

l)   357.770765

m)   340,077.446

**Quiz**

1. Write the value of the 3 in 5,085,375.048417.

2. Write the value of the 4 in 62,770.53654.

3. What digit in 210,773.4353 is in the ten thousands place?

4. What digit in 2,345,875.802066 is in the thousandths place?

5. Write 2,653,070.188204 in words.

6. Write 870,375.18 in words.

# Describe Data Using Mathematical Language

**Review**    The answer key for this lesson is on the last page.

Data are often displayed in tables or graphs to organize and make the data more usable.

**Example A**

Which statement correctly describes the data in the table?

**Number of Elizabeth's Wins at Track Meets**

| Number of Wins | Number of Meets |
|:---:|:---:|
| 1 | 9 |
| 2 | 4 |
| 4 | 1 |

A.    Elizabeth's total number of wins was 7.

B.    Elizabeth's total number of wins was 21.

C.    Elizabeth's number of wins decreased during the season.

D.    Elizabeth's number of wins increased during the season.

The correct answer is B. Add the number of wins at each meet:
$1(9) + 2(4) + 4(1) = 21$.

*********************************************************************

**Example B**

Which statement correctly describes the data in the Venn diagram?

**Band and Orchestra Members**
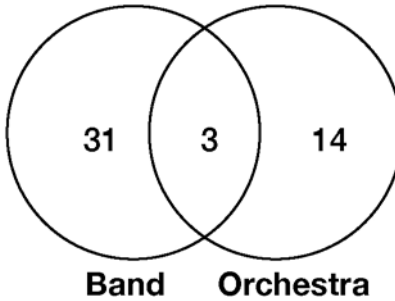


Band    Orchestra

A.    A total of 48 members play in the band or orchestra.

B.    A total of 51 members play in the band or orchestra.

C.    A total of 17 members play in the band and orchestra.

D.    A total of 20 members play in the band and orchestra.

The correct answer is A. Add the numbers in each section of the Venn diagram once.

*********************************************************************************

**Which statement correctly describes the data in the pictograph?**

### Number of Books Casey Read

| | |
|---|---|
| Week 1 | ☐ ☐ ☐ |
| Week 2 | ☐ ☐ ☐ ☐ |
| Week 3 | ☐ ☐ ☐ ☐ ☐ |
| Week 4 | ☐ ☐ ☐ ☐ |
| Week 5 | ☐ ☐ |

### Key

☐ = 5 books read

A.      As the weeks increased, Casey read fewer books.

B.      As the weeks increased, Casey read more books.

C.      The greatest difference in the numbers of books Casey read is 10.

D.      The greatest difference in the numbers of books Casey read is 15.

Does the number of books Casey read each week increase over the 5 weeks? _____

Does the number of books Casey read each week decrease over the 5 weeks? _____

Which answer choices can be ruled out? _____

What is the greatest number of books read each week? _____

What is the least number of books read each week? _____

What is the difference between these two numbers? ____ – ____ = ____

The greatest difference in the number of books read each week is _____.

1.  Kim surveyed the students in her school about their favorite hot lunch main dish. Kim organized the data in the table below. Which statement correctly describes the data in the table?

**Favorite Hot Lunch Main Dish**

| Food | Number of Votes |
| --- | --- |
| Chicken tenders | 49 |
| Hot dogs | 21 |
| Pizza | 105 |
| Spaghetti | 74 |
| Other | 17 |

A.  Pizza received the most votes.

B.  The total number of students who voted was 249.

C.  The food served most often received the most votes.

D.  The difference between the food that received the most and fewest votes was 88.

**2.** Sara surveyed 150 students at lunch about the number of hours they spent watching TV and/or playing video games the prior night. Which statement about the prior night correctly describes the data in the Venn diagram?

**TV and Video Game Survey**



43    7    21
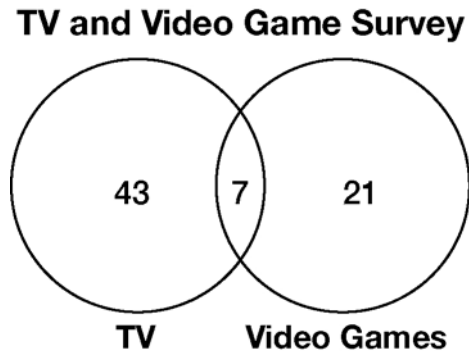
TV       Video Games

A. There were 71 students surveyed who did not watch TV or play video games.

B. More students surveyed played video games than watched TV.

C. There were 29 more students surveyed who watched TV than who only played video games.

D. More than half of the students surveyed watched TV and/or played video games.

## Quiz

**1.**   Shanti surveyed 300 students at her school about their favorite sports.

Which statement correctly describes the data in the circle graph?

**Favorite Sports Survey**

Soccer 85
Baseball 60
Basketball 45
Football 110
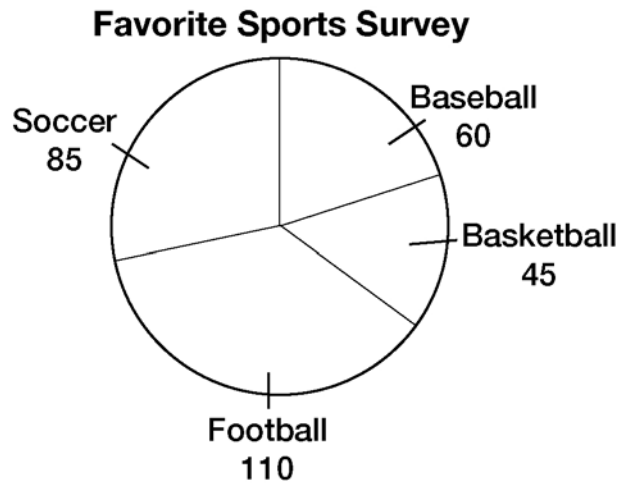
A.   More students chose baseball than soccer.

B.   More students chose football than any other two sports combined.

C.   More students chose baseball and basketball combined than soccer.

D.   More students chose baseball and soccer combined than basketball and football combined.

**2.** Which statement correctly describes the data in the bar graph?

**Money Earned for School Fund-raiser**
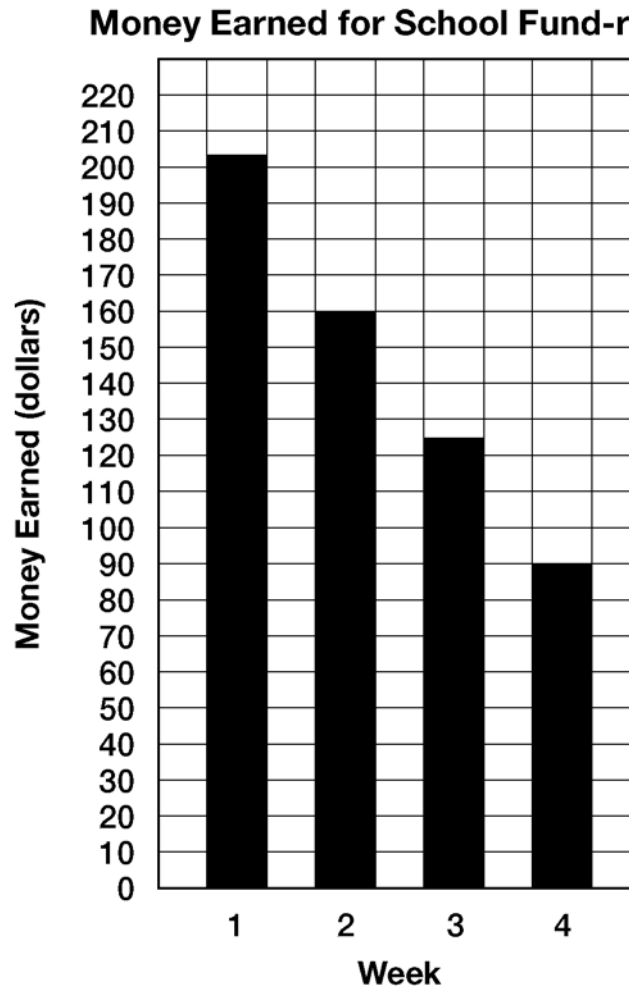


F. The amount of money earned each week increased by the same amount.

G. The amount of money earned each week decreased by the same amount.

H. The amount of money earned each week increased but not by the same amount.

J. The amount of money earned each week decreased but not by the same amount.

**Answer Key**

**Guided Practice**

No

No

A. and B.

25

25, 10, 15

15

**Practice**

**1.**    A.    Pizza received the most votes.

**2.**    C.    There were 29 more students surveyed who watched TV than who only played video games.

**Quiz**

**1.**    C.    More students chose baseball and basketball combined than soccer.

**2.**    J.    The amount of money earned each week decreased but not by the same amount.

Name: _____

# Decimals: Tenths

I ate 2.6 dog biscuits today.

| | decimal number | word name | fraction or mixed number |
|---|---|---|---|
| **a.** | 0.5 | five tenths | |
| **b.** | | one and two tenths | $1\frac{2}{10}$ |
| **c.** | 3.7 | | |
| **d.** | | one tenth | |
| **e.** | | | $9\frac{7}{10}$ |
| **f.** | 10.3 | | |
| **g.** | | thirteen and nine tenths | |
| **h.** | | | $\frac{6}{10}$ |
| **i.** | 9.4 | | |
| **j.** | | eighteen and two tenths | |
| **k.** | | | $5\frac{8}{10}$ |

# ANSWER KEY

## Decimals: Tenths

| | decimal number | word name | fraction or mixed number |
|---|---|---|---|
| a. | 0.5 | five tenths | $\dfrac{5}{10}$ |
| b. | **1.2** | one and two tenths | $1\ \dfrac{2}{10}$ |
| c. | 3.7 | **three and seven tenths** | $3\ \dfrac{7}{10}$ |
| d. | **0.1** | one tenth | $\dfrac{1}{10}$ |
| e. | **9.7** | **nine and seven tenths** | $9\ \dfrac{7}{10}$ |
| f. | 10.3 | **ten and three tenths** | $10\ \dfrac{3}{10}$ |
| g. | **13.9** | thirteen and nine tenths | $13\ \dfrac{9}{10}$ |
| h. | **0.6** | **six tenths** | $\dfrac{6}{10}$ |
| i. | 9.4 | **nine and four tenths** | $9\ \dfrac{4}{10}$ |
| j. | **18.2** | eighteen and two tenths | $18\ \dfrac{2}{10}$ |
| k. | **5.8** | **five and eight tenths** | $5\ \dfrac{8}{10}$ |