Whatcom County Math Championship – 2019
Individual – 4th Grade

1. How many degrees does a minute hand sweep through in one day?

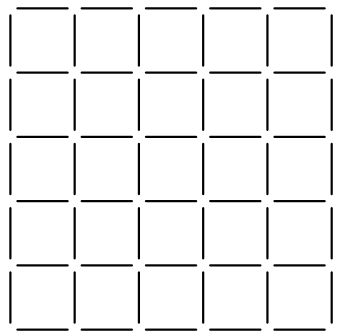
2. If 8 less than 6 times a number is 82, what is the number?

3. Saladin has a dollar in change, and gives Willow a penny, a nickel, a dime and a quarter. How many cents does he have left?

4. What is the next term in the sequence 5, 20, 80, ___?

5. How many six-digit whole number powers of 3 are there?

6. How toothpicks make up this picture?



7. A and M and B are points on a number line, with M halfway between A and B. A is $\frac{4}{5}$ and M is $\frac{13}{8}$. What is B? **Write your answer as a reduced fraction.**

8. Write 6.28 as an improper fraction in lowest terms in the form a/b.

9. If a square has a diagonal of length 32, what is the area?

10. What is the remainder when 2019 is divided by 19?

11. Evie ate 60% of a chocolate bar, and there are 6 squares remaining. How many squares of chocolate were in the bar at the beginning?

12. Abby had a pack of 15 cards numbered from 1 to 15. She arranged the cards into five unequal piles. The numbers on the cards in each pile add to the same total. What is that total?

13. What percent of 180 is 144?

14. 3! means 3 x 2 x1, which equals 6. If 2^m is a factor of 10!, what is the largest number m could be?

15. If Anand rolls two six - sided dice and adds the results, what is the probability that she will roll a 7 or lower? **Write your answer as a reduced fraction.**

16. Belle can get a small 8 ounce hot chocolate for $1.75, a medium 12 ounce for $2.50, or a large 16 ounce for $3.40. Which size is the best deal?

17. If Zara rolls two six-sided dice and adds the results, what is the probability that she will roll an 6, 7, or 8? **Write your answer as a reduced fraction.**

18. How many sixths are there in six and five - sixths?

19. How many factors does 1008 have?

20. The first 5 pentagonal numbers are 1, 5, 12, 22 and 35. What is the twelfth pentagonal number?

21. A quadrilateral has angles that in the ratio 3:3:4:5. What is the largest angle?

22. What is the average of the positive factors of 96?

23. How many diagonals are there in an octagon?

24. Using only nickels, dimes and quarters, how many ways can you make $1.15?

25. If $2^x = 180$, what is x, to the nearest tenth?

26. What is the next term in this geometric sequence: 125, 100, 80, ___?

27. What is the perimeter of a semicircle with a radius of 8 cm? **Round your answer to the nearest tenth.**

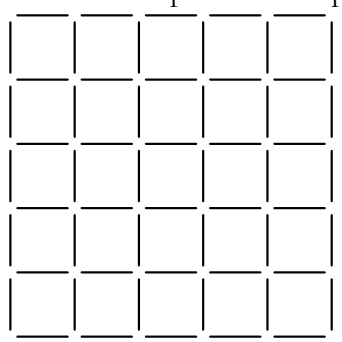
28. What is the slope of the line between the points (9, 20) and (–27, 65)? **Round your answer to the nearest hundredth.**

29. What is the area of an isosceles triangle with sides 17, 17 and 16?

30. If you count backwards from 2,019,000 by nineteens, what is the first two-digit number you say?

Whatcom County Math Championship – 2019
Individual – 5th Grade

1. How toothpicks make up this picture?



2. A and M and B are points on a number line, with M halfway between A and B. A is $\frac{4}{5}$ and M is $\frac{13}{8}$. What is B? **Write your answer as a reduced fraction.**

3. Write 6.28 as an improper fraction in lowest terms in the form a/b.

4. If a square has a diagonal of length 32, what is the area?

5. What is the remainder when 2019 is divided by 19?

6. Evie ate 60% of a chocolate bar, and there are 6 squares remaining. How many squares of chocolate were in the bar at the beginning?

7. Abby had a pack of 15 cards numbered from 1 to 15. She arranged the cards into five unequal piles. The numbers on the cards in each pile add to the same total. What is that total?

8. What percent of 180 is 144?

9. 3! means 3 x 2 x1, which equals 6. If 2^m is a factor of 10!, what is the largest number m could be?

10. If Anand rolls two six - sided dice and adds the results, what is the probability that she will roll a 7 or lower? **Write your answer as a reduced fraction.**

11. Belle can get a small 8 ounce hot chocolate for $1.75, a medium 12 ounce for $2.50, or a large 16 ounce for $3.40. Which size is the best deal?

12. If Zara rolls two six-sided dice and adds the results, what is the probability that she will roll an 6, 7, or 8? **Write your answer as a reduced fraction.**

13. How many sixths are there in six and five - sixths?

14. How many factors does 1008 have?

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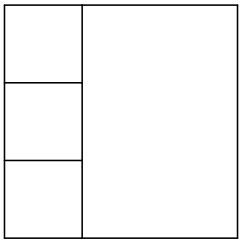
23. What is the slope of the line between the points (9, 20) and (–27, 65)? **Round your answer to the nearest hundredth.**

24. What is the area of an isosceles triangle with sides 17, 17 and 16?

25. If you count backwards from 2,019,000 by nineteens, what is the first two-digit number you say?

26. Three squares and one rectangle are placed to form one large square below. If the area of the large square is 324, what is the area of the rectangle?



27. Drake's Ice Cream offers 15 flavors of ice cream, 6 choices of topping and three choices of cone. If Gabriel wants to get a cone with two different scoops of ice cream and a topping, how many different combinations could they buy?

28. How many ways can you rearrange the letters in the word ABRACADABRA?

29. The sum of three consecutive odd numbers is 2019. What is the largest of these numbers?

30. What is the smallest whole number perimeter possible of a rectangle with an area of 108?

Whatcom County Math Championship – 2019
Individual – 6th Grade

1. Evie ate 60% of a chocolate bar, and there are 6 squares remaining. How many squares of chocolate were in the bar at the beginning?

2. Abby had a pack of 15 cards numbered from 1 to 15. She arranged the cards into five unequal piles. The numbers on the cards in each pile add to the same total. What is that total?

3. What percent of 180 is 144?

4. 3! means 3 x 2 x1, which equals 6. If 2^m is a factor of 10!, what is the largest number m could be?

5. If Anand rolls two six - sided dice and adds the results, what is the probability that she will roll a 7 or lower? **Write your answer as a reduced fraction.**

6. Belle can get a small 8 ounce hot chocolate for $1.75, a medium 12 ounce for $2.50, or a large 16 ounce for $3.40. Which size is the best deal?

7. If Zara rolls two six-sided dice and adds the results, what is the probability that she will roll an 6, 7, or 8? **Write your answer as a reduced fraction.**

8. How many sixths are there in six and five - sixths?

9. How many factors does 1008 have?

10. The first 5 pentagonal numbers are 1, 5, 12, 22 and 35. What is the twelfth pentagonal number?

11. A quadrilateral has angles that in the ratio 3:3:4:5. What is the largest angle?

12. What is the average of the positive factors of 96?

13. How many diagonals are there in an octagon?

14. Using only nickels, dimes and quarters, how many ways can you make $1.15?

15. If $2^x = 180$, what is x, to the nearest tenth?

16. What is the next term in this geometric sequence: 125, 100, 80, ___?

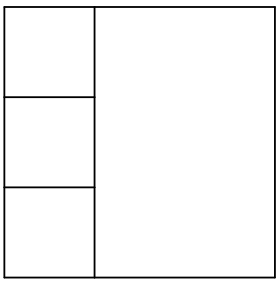
17. What is the perimeter of a semicircle with a radius of 8 cm? **Round your answer to the nearest tenth.**

18. What is the slope of the line between the points (9, 20) and (–27, 65)? **Round your answer to the nearest hundredth.**

19. What is the area of an isosceles triangle with sides 17, 17 and 16?

20. If you count backwards from 2,019,000 by nineteens, what is the first two-digit number you say?

21. Three squares and one rectangle are placed to form one large square below. If the area of the large square is 324, what is the area of the rectangle?



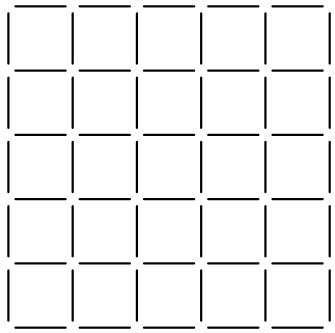
22. Drake's Ice Cream offers 15 flavors of ice cream, 6 choices of topping and three choices of cone. If Gabriel wants to get a cone with two different scoops of ice cream and a topping, how many different combinations could they buy?

23. How many ways can you rearrange the letters in the word ABRACADABRA?

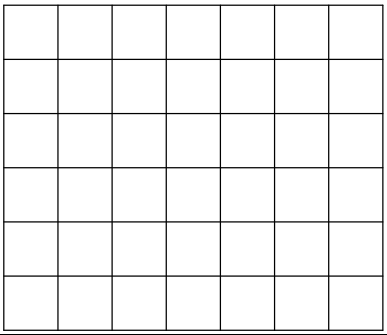
24. The sum of three consecutive odd numbers is 2019. What is the largest of these numbers?

25. What is the smallest whole number perimeter possible of a rectangle with an area of 108?

26. If this picture was 32 by 27 instead of 5 by 5, how toothpicks would there be?

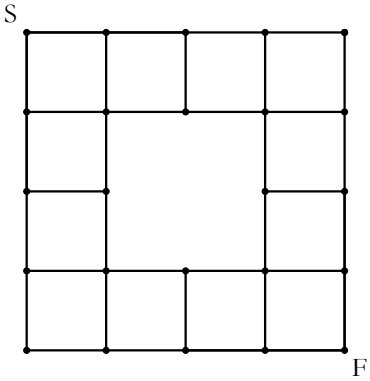


27. In Connect 4, you win by getting four squares in a row (horizontally, vertically, diagonally). How many different ways are there to get four squares in a row?



28. If a square has a diagonal of length that is the same numerical value as its area, what is the perimeter of that square? **Round your answer to the nearest hundredth.**

29. How many paths are there from S to F, if you can only travel down and right?



30. Abby had a pack of 8 cards numbered from 1 to 8. She arranged the cards into three unequal piles. The numbers on the cards in each pile add to the same total. How many different ways can Abby do this?

Whatcom County Math Championship – 2019
Individual – 7^{th} + 8^{th} Grade

1. Belle can get a small 8 ounce hot chocolate for $1.75, a medium 12 ounce for $2.50, or a large 16 ounce for $3.40. Which size is the best deal?

2. If Zara rolls two six-sided dice and adds the results, what is the probability that she will roll an 6, 7, or 8? **Write your answer as a reduced fraction.**

3. How many sixths are there in six and five - sixths?

4. How many factors does 1008 have?

5. The first 5 pentagonal numbers are 1, 5, 12, 22 and 35. What is the twelfth pentagonal number?

6. A quadrilateral has angles that in the ratio 3:3:4:5. What is the largest angle?

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8. How many diagonals are there in an octagon?

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10. If $2^x = 180$, what is x, to the nearest tenth?

11. What is the next term in this geometric sequence: 125, 100, 80, ___?

12. What is the perimeter of a semicircle with a radius of 8 cm? **Round your answer to the nearest tenth.**

13. What is the slope of the line between the points (9, 20) and (–27, 65)? **Round your answer to the nearest hundredth.**

14. What is the area of an isosceles triangle with sides 17, 17 and 16?

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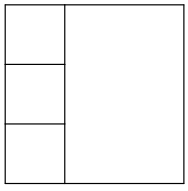

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18. How many ways can you rearrange the letters in the word ABRACADABRA?

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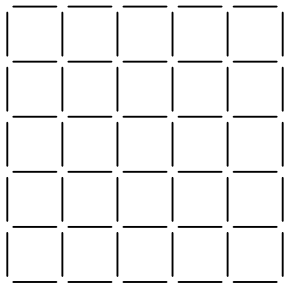

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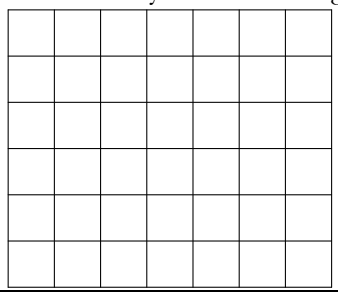

23. If a square has a diagonal of length that is the same numerical value as its area, what is the perimeter of that square? **Round your answer to the nearest hundredth.**

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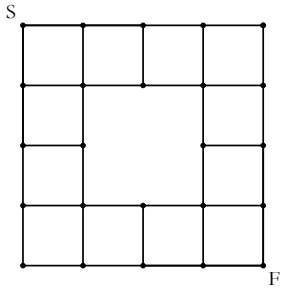
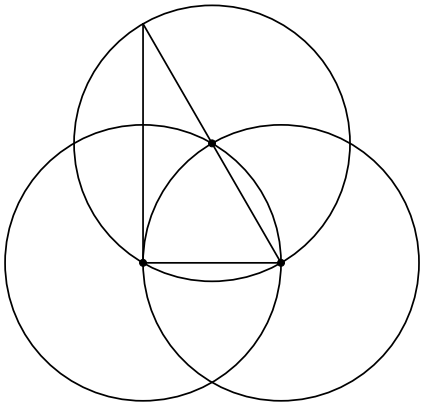


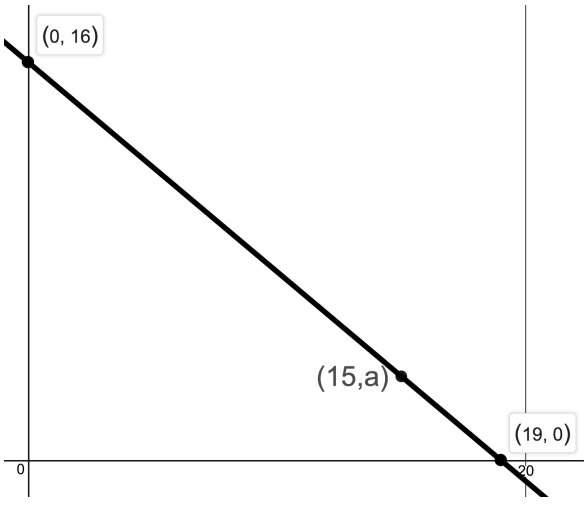
25. Abby had a pack of 8 cards numbered from 1 to 8. She arranged the cards into three unequal piles. The numbers on the cards in each pile add to the same total. How many different ways can Abby do this?

26. Super Wario's Taco Truck sells tacos for $1.50 each and drinks for $0.75 each. At the end of the week, they had sold $900 dollars worth of food and drink. If they sold twice the number of tacos as drinks, how many tacos did they sell?

27. In the figure below, the marked points are centers of congruent circles. If the radius of the circles is 6, what is the area of the triangle? **Round your answer to the nearest tenth.**



28. In the figure below, what is **a**? **Round your answer to the nearest hundredth.**



29. 3! means 3 x 2 x1, which equals 6. If 2^m is a factor of 20!, what is the largest number m could be?

30. You roll two fair six – sided dice, but only count the higher of the two results. What is the probability that your result will be a 5? **Write your answer as a reduced fraction**