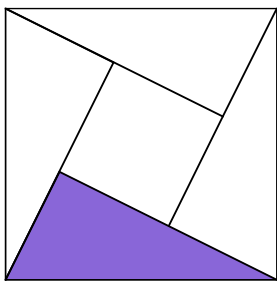


Whatcom County Math Championship – 2014

Probability + Statistics – 4th Grade

1. If Sam rolls two fair 6 – sided dice and adds the two results, what is the probability of rolling a number less than 6? **Write your answer as a reduced fraction.**
2. Alex has a bag containing a \$1 bill, a \$5 bill, a \$10 bill and a \$20 bill, as well as a nickel, a dime and a quarter. If Alex picks out a bill and a coin at random, how many different values are possible for Alex to get?
3. The Fibonacci numbers are those that follow the pattern 1, 1, 2, 3, 5, 8.... If you choose a number from 1 to 100 at random, what is the probability that you will choose a Fibonacci number? **Write your answer as a reduced fraction.**
4. If George flips a quarter and a nickel, what is the probability that the coins will land on different faces? **Write your answer as a reduced fraction.**
5. What is the average (arithmetic mean) of all the positive two-digit multiples of 3? **Write your answer as a decimal rounded to the tenths place.**
6. The product of two numbers is 72 and their average is 9. What is the difference of the two numbers?
7. Sunny buys a bag of donut holes from Starship Donuts; in the bag are 3 chocolate holes, 5 blueberry holes, 2 glazed holes and 2 pumpkin holes. If Sunny reaches in and grabs a donut at random, what is the probability that she will get a glazed donut hole? **Write your answer as a reduced fraction.**
8. In a standard 52 – card deck, there are 4 suits, with 13 cards each. If Aces are worth 15 points each, face cards (King, Queen, Jack) worth 10 each, and every other card worth the number showing, what is the average point value of a card? **Write your answer as a decimal rounded to the hundredths place.**
9. The square below is cut into a smaller square and four congruent triangles. The small square is one-fifth the size of the large square. If a point inside the big square is chosen at random, what is the probability that it will **not** be in the shaded region? **Write your answer as a reduced fraction.**

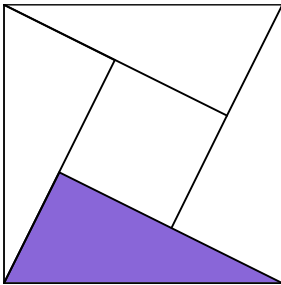


10. If you subtract the median of the first 10 square numbers from the average of those numbers, what is the result?

Whatcom County Math Championship – 2014

Probability + Statistics – 5th Grade

1. If George flips a quarter and a nickel, what is the probability that the coins will land on different faces? **Write your answer as a reduced fraction.**
2. What is the average (arithmetic mean) of all the positive two-digit multiples of 3? **Write your answer as a decimal rounded to the tenths place.**
3. The product of two numbers is 72 and their average is 9. What is the difference of the two numbers?
4. Sunny buys a bag of donut holes from Starship Donuts; in the bag are 3 chocolate holes, 5 blueberry holes, 2 glazed holes and 2 pumpkin holes. If Sunny reaches in and grabs a donut at random, what is the probability that she will get a glazed donut hole? **Write your answer as a reduced fraction.**
5. In a standard 52 – card deck, there are 4 suits, with 13 cards each. If Aces are worth 15 points each, face cards (King, Queen, Jack) worth 10 each, and every other card worth the number showing, what is the average point value of a card? **Write your answer as a decimal rounded to the hundredths place.**
6. The square below is cut into a smaller square and four congruent triangles. The small square is one-fifth the size of the large square. If a point inside the big square is chosen at random, what is the probability that it will **not** be in the shaded region? **Write your answer as a reduced fraction.**

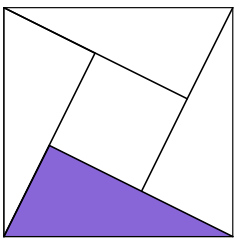


7. If you subtract the median of the first 10 square numbers from the average of those numbers, what is the result?
8. The average of 6 numbers is 19. If two of the numbers are removed, then the average is 20. What is the sum of the two numbers removed?
9. If Amelia rolls two fair 6 –sided dice and **multiplies** the results, what is the probability that they answer will be evenly divisible by 4? **Write your answer as a reduced fraction.**
10. If you choose a number that is from 20 through 80 at random, what is the probability you will get a number divisible by 3? **Write your answer as a reduced fraction.**

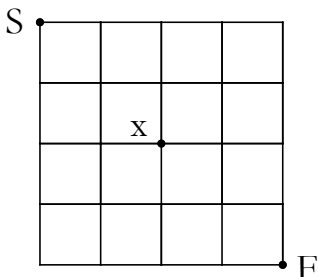
Whatcom County Math Championship – 2014

Probability + Statistics – 6th Grade

1. Sunny buys a bag of donut holes from Starship Donuts; in the bag are 3 chocolate holes, 5 blueberry holes, 2 glazed holes and 2 pumpkin holes. If Sunny reaches in and grabs a donut at random, what is the probability that she will get a glazed donut hole? **Write your answer as a reduced fraction.**
2. In a standard 52 – card deck, there are 4 suits, with 13 cards each. If Aces are worth 15 points each, face cards (King, Queen, Jack) worth 10 each, and every other card worth the number showing, what is the average point value of a card? **Write your answer as a decimal rounded to the hundredths place.**
3. The square below is cut into a smaller square and four congruent triangles. The small square is one-fifth the size of the large square. If a point inside the big square is chosen at random, what is the probability that it will **not** be in the shaded region? **Write your answer as a reduced fraction.**



4. If you subtract the median of the first 10 square numbers from the average of those numbers, what is the result?
5. The average of 6 numbers is 19. If two of the numbers are removed, then the average is 20. What is the sum of the two numbers removed?
6. If Amelia rolls two fair 6 –sided dice and **multiplies** the results, what is the probability that they answer will be evenly divisible by 4? **Write your answer as a reduced fraction.**
7. If you choose a number that is from 20 through 80 at random, what is the probability you will get a number divisible by 3? **Write your answer as a reduced fraction.**
8. Tamara is walking through the city from Start to Finish. At each intersection, she flips a coin to decide which way to go, south or east (if she has no choice, she keeps going). What is the probability that she passes through the point x on her way from S to F?



9. The Fibonacci numbers are those that follow the pattern 1, 1, 2, 3, 5, 8.... If you choose a number from 1 to 10000 at random, what is the probability that you will choose a Fibonacci number? **Write your answer as a reduced fraction.**
10. If Sam rolls two fair 6 – sided dice and subtracts the bigger number from the smaller number, what is the average result of all possible rolls? **Write your answer as a decimal rounded to the hundredths place.**

Whatcom County Math Championship – 2014

Probability + Statistics – 7th and 8th Grade

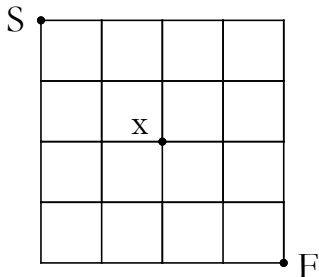
1. If you subtract the median of the first 10 square numbers from the average of those numbers, what is the result?

2. The average of 6 numbers is 19. If two of the numbers are removed, then the average is 20. What is the sum of the two numbers removed?

3. If Amelia rolls two fair 6 –sided dice and **multiplies** the results, what is the probability that they answer will be evenly divisible by 4? **Write your answer as a reduced fraction.**

4. If you choose a number that is from 20 through 80 at random, what is the probability you will get a number divisible by 3? **Write your answer as a reduced fraction.**

5. Tamara is walking through the city from Start to Finish. At each intersection, she flips a coin to decide which way to go, south or east (if she has no choice, she keeps going). What is the probability that she passes through the point x on her way from S to F?



6. The Fibonacci numbers are those that follow the pattern 1, 1, 2, 3, 5, 8.... If you choose a number from 1 to 10000 at random, what is the probability that you will choose a Fibonacci number? **Write your answer as a reduced fraction.**

7. If Sam rolls two fair 6 – sided dice and subtracts the bigger number from the smaller number, what is the average result of all possible rolls? **Write your answer as a decimal rounded to the hundredths place.**

8. Sunny buys a bag of donut holes from Starship Donuts; in the bag are 3 chocolate holes, 5 blueberry holes, 2 glazed holes and 2 pumpkin holes. If Sunny reaches in and grabs a three donuts at random, what is the probability that she will get 2 blueberry and 1 glazed donut holes? **Write your answer as a reduced fraction.**

9. In a standard 52 – card deck, there are 4 suits, with 13 cards each. Aces are worth 15 points each, face cards (King, Queen, Jack) worth 10 each, and every other card worth the number showing. If a card is drawn at random, what is the probability that the card's value will be higher than the average point value of a card? **Write your answer as a reduced fraction.**

10. What is the probability that a dart thrown at random at the board below will hit one of the spaces marked with a *? **Write your answer as a decimal rounded to the hundredths place.**

