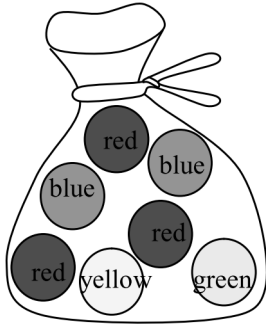


Unit 12: Probability

Name: \_\_\_\_\_

Date: \_\_\_\_\_

1. Rachel put 3 red marbles, 2 blue marbles, 1 yellow marble, and 1 green marble into a bag as shown below. All the marbles were the same shape and size.

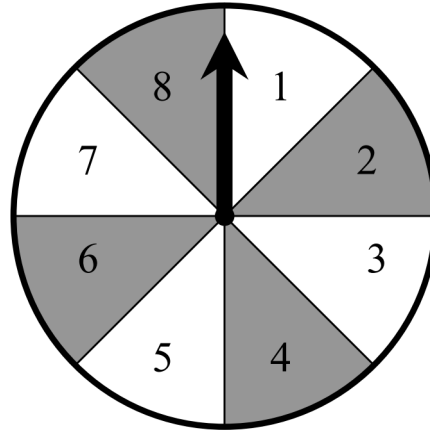


Without looking Rachel pulled 2 marbles out of the bag. Which of the following could she have pulled?

- A. green, green                      B. yellow, orange  
 C. blue, black                        D. red, red
2. A number cube is labeled with the digits 1 through 6. The cube is tossed once. What is the probability that the cube will land on either a 4 or a 6?

- A.  $\frac{1}{2}$       B.  $\frac{1}{3}$       C.  $\frac{1}{4}$       D.  $\frac{1}{6}$

3. Karina and Michael decided to spin the arrow on the spinner below to determine who would win their game.



Which of the following describes a rule that is fair to both students?

- A. Spin a 1, 2, or 3 –Karina wins  
 Spin a 4, 5, 6, 7, or 8 –Michael wins
- B. Spin a 1, 3, 5, 7, or 8 –Karina wins  
 Spin a 2, 4, or 6 –Michael wins.
- C. Spin a 1 or 2 –Karina wins.  
 Spin any other number Michael wins.
- D. Spin an even number –Karina wins.  
 Spin an odd number –Michael wins.
4. A color tile will be taken at random from a bag that contains 2 blue tiles, 5 red tiles, and 4 green tiles. What is the probability that the tile will be green?

- A.  $\frac{1}{10}$       B.  $\frac{1}{4}$       C.  $\frac{4}{11}$       D.  $\frac{4}{7}$

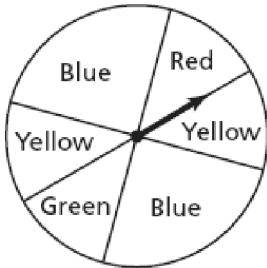
Unit 12: Probability

5. Alyce has 36 marbles in a bag, all the same size and shape. There are 12 red, 14 blue, and 10 yellow marbles in the bag. She will select a marble from the bag at random.

What is the probability that the marble Alyce selects will be red?

- A.  $\frac{1}{3}$     B.  $\frac{1}{36}$     C.  $\frac{7}{18}$     D.  $\frac{5}{18}$

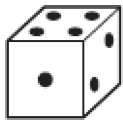
6. The spinner shown below is divided into sections so that the area of each blue section is  $\frac{1}{4}$  the area of the spinner. The area of each of the remaining sections is  $\frac{1}{8}$  the area of the spinner.



What is the probability of spinning the arrow once and getting an outcome of blue?

- A.  $\frac{1}{8}$     B.  $\frac{1}{4}$     C.  $\frac{1}{3}$     D.  $\frac{1}{2}$

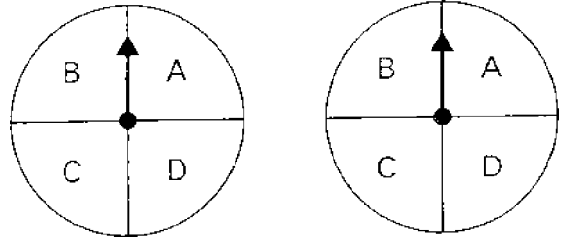
7. The number cube shown is numbered 1 through 6 on its faces.



When the cube is tossed once, what is the probability a number divisible by three will be on the top face?

- A.  $\frac{1}{3}$     B.  $\frac{1}{6}$     C.  $\frac{1}{2}$     D. 1

8. The spinners below are each divided into 4 equal sections



If each spinner is spun once, what is the probability that the arrows will *both* land on A?

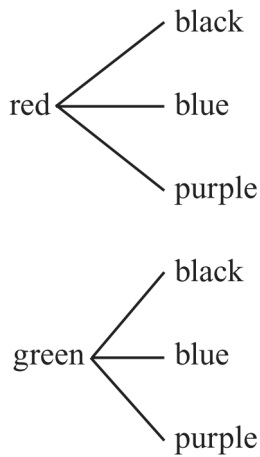
- A.  $\frac{1}{4}$     B.  $\frac{2}{4}$     C.  $\frac{2}{16}$     D.  $\frac{1}{16}$

Unit 12: Probability

9. Sarah has the following items in her book bag:

- one red 12-inch ruler
- one green 12-inch ruler
- one black pen
- one blue pen
- one purple pen

Sarah will randomly select one 12-inch ruler and one pen. The tree diagram below shows all of the possible combinations of one 12-inch ruler and one pen that Sarah could select.



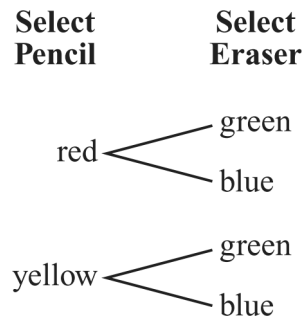
What is the probability that Sarah will select a green 12-inch ruler and either a black or a purple pen?

- A.  $\frac{1}{4}$     B.  $\frac{1}{3}$     C.  $\frac{1}{2}$     D.  $\frac{2}{3}$

10. Nick has the following items in a bag:

- one red pencil
- one yellow pencil
- one green eraser
- one blue eraser

Nick will randomly select one pencil and one eraser from the bag. Both pencils are the same size and shape. Both erasers are the same size and shape. The tree diagram below shows all the possible combinations Nick can select.

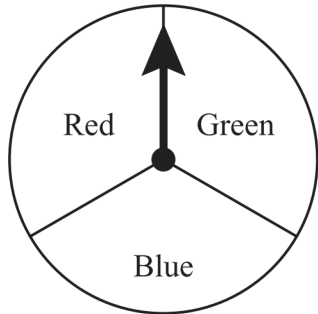


What is the probability that Nick will select a red pencil and a blue eraser?

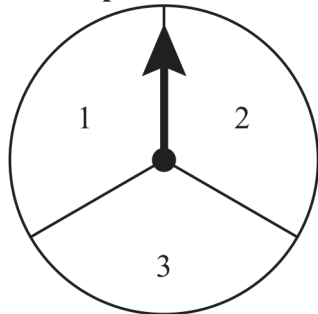
- A.  $\frac{1}{4}$     B.  $\frac{1}{3}$     C.  $\frac{1}{2}$     D.  $\frac{3}{4}$

Unit 12: Probability

11. Tai plays a game using two spinners. Each spinner is divided into three sections of equal size, as shown below.



Spinner M



Spinner N

Tai will spin the arrow on each spinner one time.

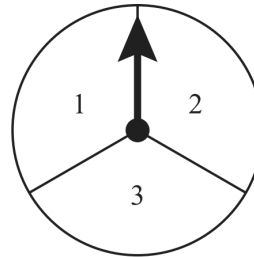
The organized list below shows all possible combinations of sections on which the arrows can land.

Red 1 Blue 1 Green 1  
 Red 2 Blue 2 Green 2  
 Red 3 Blue 3 Green 3

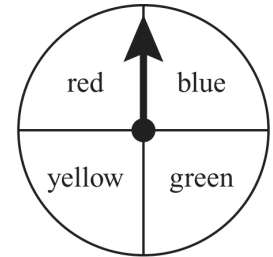
What is the probability that the arrow on Spinner M will land on the green section and the arrow on Spinner N will land on a section with an odd number?

- A.  $\frac{1}{9}$     B.  $\frac{2}{9}$     C.  $\frac{1}{3}$     D.  $\frac{2}{3}$

12. Haley has one spinner that is divided into three congruent sections and one spinner that is divided into four congruent sections, as shown below.



Spinner L



Spinner M

Haley will spin the arrow on each spinner one time. All the possible combinations that can occur are shown in the list below.

1, red    2, red    3, red  
 1, blue    2, blue    3, blue  
 1, green    2, green    3, green  
 1, yellow    2, yellow    3, yellow

What is the probability that the arrow on Spinner L will stop on a section with an odd number and the arrow on Spinner M will stop on the red section?

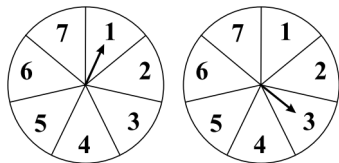
- A.  $\frac{1}{6}$     B.  $\frac{1}{5}$     C.  $\frac{11}{12}$     D.  $\frac{3}{4}$

13. Luis is going to toss two coins. What is the probability that he will toss one head and one tail?

- A.  $\frac{1}{4}$     B.  $\frac{1}{3}$     C.  $\frac{1}{2}$     D.  $\frac{3}{4}$

Unit 12: Probability

14. Use the spinners to answer the question.



When playing a board game, you spin two spinners with congruent sectors numbered 1 through 7 as shown. If the sum of the two numbers you spin is 12, 13, or 14, you win. What is the probability of winning?

- A.  $\frac{21}{49}$     B.  $\frac{10}{49}$     C.  $\frac{15}{49}$     D.  $\frac{6}{49}$

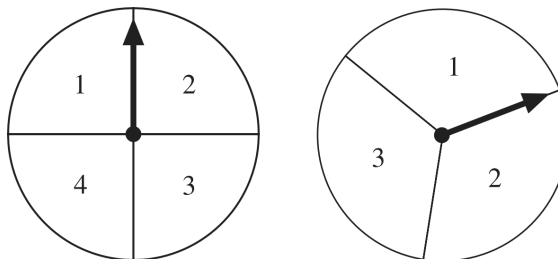
15. Use the picture of the cards to answer the question.



Each of the letters M, A, T, and H appear on the reverse side of one of the four cards on the right (one letter per card), but not necessarily in that order. If the cards are turned over, what is the probability that they will be ordered so that they spell the word MATH?

- A.  $\frac{1}{4}$     B.  $\frac{1}{12}$     C.  $\frac{1}{24}$     D.  $\frac{1}{48}$

16. Joshua spun the arrow on each spinner shown below exactly once. He recorded the sum of the resulting two numbers.

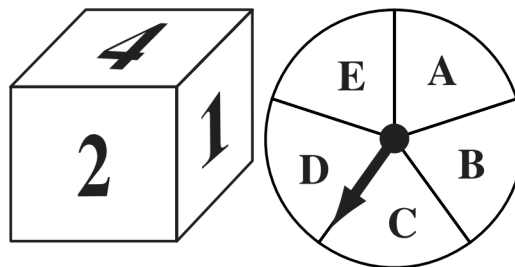


What is the probability that the sum of the resulting two numbers will be 2?

- A.  $\frac{1}{12}$     B.  $\frac{1}{4}$     C.  $\frac{1}{3}$     D.  $\frac{7}{12}$

17. A number cube with faces numbered 1 through 6 will be tossed once, and the arrow on a spinner with equally sized regions labeled A through E will be spun at the same time.

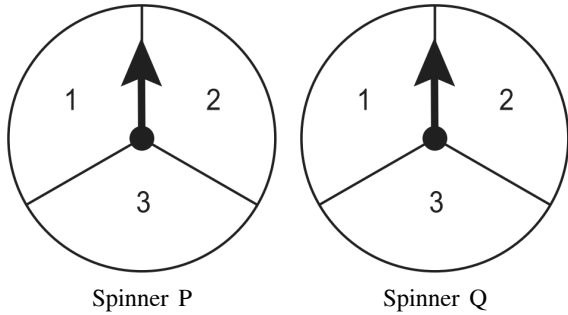
What is the probability that the number facing up on the cube will be less than 3 and the arrow will land on a region labeled A or E?



- A.  $\frac{17}{30}$     B.  $\frac{3}{11}$     C.  $\frac{2}{15}$     D.  $\frac{1}{15}$

Unit 12: Probability

18. Spinners P and Q shown below are divided into congruent sections.



The arrow on each spinner will be spun once. The number in the section where the arrow stops on Spinner P will be added to the number in the section where the arrow stops on Spinner Q.

What is the probability that the sum of the two numbers will be 5?

- A.  $\frac{1}{9}$     B.  $\frac{2}{9}$     C.  $\frac{1}{3}$     D.  $\frac{2}{3}$

19. Denise has the following pencils in a drawer:

- 5 blue pencils
- 3 green pencils

Denise took a blue pencil from the drawer and gave it to a friend. If she takes a second pencil from the drawer at random, what is the probability that the second pencil she takes will be **green**?

- A.  $\frac{1}{2}$     B.  $\frac{3}{7}$     C.  $\frac{3}{8}$     D.  $\frac{1}{3}$

20. Lita flipped a coin 5 times. On each flip the coin landed on tails. Which of these shows how to calculate the probability of this outcome?

- A.  $5 \times \frac{1}{2}$     B.  $\frac{1}{2} \times \frac{1}{5}$   
C.  $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}$     D.  $\frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2}$

1.  
Answer: D
2.  
Answer: B
3.  
Answer: D
4.  
Answer: C
5.  
Answer: A
6.  
Answer: D
7.  
Answer: A
8.  
Answer: D
9.  
Answer: B
10.  
Answer: A
11.  
Answer: B
12.  
Answer: A
13.  
Answer: C
14.  
Answer: D
15.  
Answer: C
16.  
Answer: A
17.  
Answer: C
18.  
Answer: B
19.  
Answer: B
- 20.