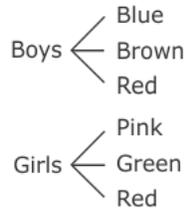


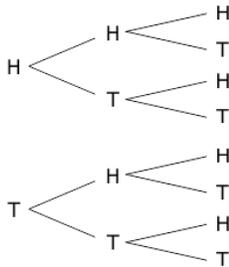
Choose the best answer to each question.

1. A coach opens a box of boys' and girls' basketball uniforms. She makes a tree diagram to show the different colors of uniforms in the box.



Based on this diagram, what is the probability of selecting a girls' red uniform?

- $1/2$
  - $1/3$
  - $1/6$
  - $1/8$
2. Ben will toss a penny, a nickel, and a dime. The tree diagram shows the possible outcomes.

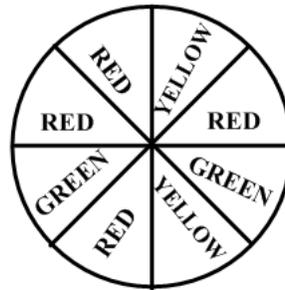


How many different outcomes are possible?

- 4
  - 8
  - 12
  - 14
3. Mrs. Jones wants to make cookies.
- She can make chocolate, vanilla, butter, or oatmeal cookies.
  - She will add either chocolate chips, nuts, or raisins.
- Use the Fundamental Counting Principle to find out how many different types of cookies Mrs. Jones can make.

4. A number cube is labeled 1 to 6. Richard will roll the number cube 500 times and record the results. **About** how many times could Richard expect to roll an even number?
- 80
  - 125
  - 170
  - 250

5. Maddie flipped a coin 150 times. How many times could Maddie expect the coin to land on tails?
- 25
  - 75
  - 100
  - 150
6. Hannah will roll a number cube, labeled 1 through 6, three-hundred times. **About** how many times could Hannah expect to roll a number less than 4?
- 50
  - 100
  - 150
  - 200
7. The following spinner is spun. What is the probability that the spinner will land on red?



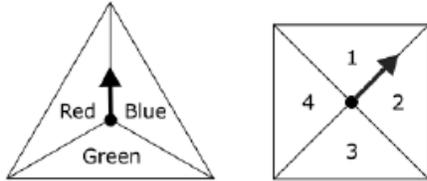
- 0.50
  - 0.25
  - 0.75
  - 4
8. Jamal will add one meat, one vegetable, and one dressing to his salad from the choices shown below.

Toppings for Salad		
Meats	Vegetables	Dressings
ham	tomatoes	ranch
turkey	carrots	bleu cheese
steak	celery	Italian
	onions	

- How many possible salads can he make from these toppings?
- 10
  - 18
  - 36
  - 40

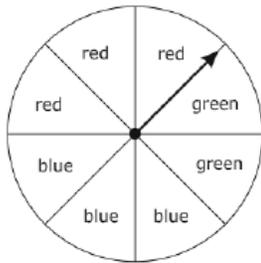
9. George will toss 3 coins at the same time. What is the probability George's toss will result in all tails?
- $1/3$
  - $1/4$
  - $1/6$
  - $1/8$

10. Janet will spin the two spinners below at the same time.



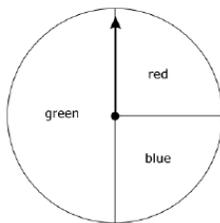
What is the probability the spinners will land on Red and on 3?

- $1/12$
  - $1/7$
  - $2/7$
  - $3/12$
11. Nathan spins the spinner below two times.



What is the probability Nathan will spin red on the first spin and blue on the second spin?

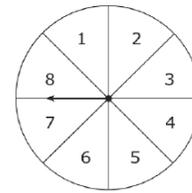
- $9/64$
  - $9/25$
  - $3/8$
12. Michael spins the spinner below two times.



What is the probability the spinner will land on green the first spin and blue the second spin?

- $1/6$
- $1/8$
- $1/9$

13. Lewis will spin the spinner below one time.



What is the likelihood of the spinner landing on a number less than 9?

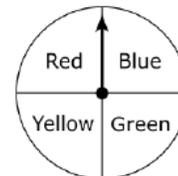
- 0
  - $1/8$
  - $1/9$
  - 1
14. A forecast calls for a 40% chance of rain today and a 40% chance of rain tomorrow. What are the chances that it will rain 2 days in a row?
- 16%
  - 25%
  - 100%

15. There are red, blue, and yellow pencils in a cup.
- Micah randomly selects a pencil.
  - The probability of randomly selecting a red pencil is  $\frac{1}{5}$ .
  - The probability of randomly selecting a blue pencil is  $\frac{1}{4}$ .

What is the probability Micah randomly selects a yellow pencil?

- 55%
- 45%
- 25%
- 20%

16. Four people will spin the spinner below.



If the first 3 spins land on red, what is the probability the fourth spin will also land on red?

- $1/16$
- $1/8$
- $1/4$
- $1/2$

17. Emma will roll two number cubes labeled 1 through 6. She will record the sum of the two numbers after each roll. She will roll the two cubes 540 times. How many times would Emma expect the sum to equal 5?

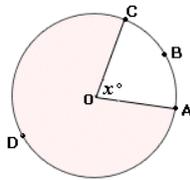
- 60
- 90
- 108
- 270

18. Alice has 2 number cubes, labeled 1 to 6. She will roll the number cubes, add the numbers showing, and record the results. She will do this 900 times. How many times could Alice expect the two number cubes to have a sum of 2?
- 25
  - 75
  - 150
  - 450

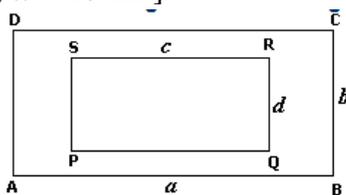
19. In a bag, there are five cards numbered 1 to 5. Each time a card is randomly selected, it is replaced in the bag. What is the probability Marsha will select an even-numbered card first and then an odd-numbered card?
- $1/25$
  - $4/25$
  - $6/25$
  - $9/25$

20. There are 13 boys and 12 girls in Mrs. Allen's class. What is the probability that a randomly selected student is a girl?
- 8.33%
  - 48%
  - 52%
  - 92.3%

21. A dart is thrown at a board in the form of a circle. If the dart hits the board, then what is the probability that it will land in the shaded area? [Given that  $x = 88^\circ$ ] What would be the answer as a decimal, fraction, or percent?

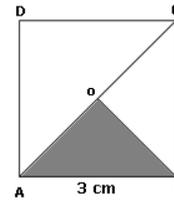


22. A dart thrown at a rectangular board ABCD is equally likely to land on any point. Find the probability of the dart hitting inside the bigger rectangle, but outside the smaller rectangle. [Given  $a = 21$  cm,  $b = 16$  cm,  $c = 18$  cm,  $d = 10$  cm.]



- $15/28$
- $13/28$
- $28/15$

23. A dart is thrown at a square ABCD. What is the probability that it does not land in the shaded region? Leave your answer as a decimal, fraction, and percent.



24. Alice has 4 red, 2 pink, 1 white, and 5 blue shirts in a drawer. Without looking, Alice pulled out a red shirt and put it on her bed. What is the probability Alice will pull out a blue shirt after she pulled out the red one?
- $5/12$
  - $5/11$
  - $5/7$

25. There is a drawer of t-shirts. There are 3 blue t-shirts, 5 black t-shirts, and 4 white t-shirts. What is the probability that I will pull a black t-shirt and then a white t-shirt, without replacement?
- $5/9$
  - $5/33$
  - $4/11$
  - $4/35$

26. There were 3 red balls, six green balls, and 3 orange balls in a box. One green ball was picked out but not put back in the box. What is the probability of picking a red ball for the second without looking?
- $3/22$
  - $3/12$
  - $6/12$
  - $3/11$

27. Jessica has 3 cards in a bag, each marked with a letter. The letters are X, Y, and Z. Without looking, she reaches into the bag, pulls out a card without putting it back into the bag. What is the correct list of all the different ways she could have pulled out the cards?
- XYZ, YXZ, ZYX
  - XYZ, XZY, YXZ, YZX, ZXY, ZYX
  - XYX, XZZ, YXX, YZZ, ZYY, ZXX

28. A bag contains 3 red beads and 2 blue beads. Two beads are drawn at random without replacement. What is the probability that both beads are red?
- 0.3
  - 0.4
  - 0.5

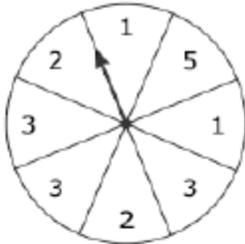
29. A box contained 20 pieces of paper labeled 1 through 20. Without looking, Susan reached into the box and pulled out one piece of paper at a time. Susan randomly selected the number 1, 16, 18, 20, 13, 9, 10, 15, 8, and 6 from the box and did not put them back in. What is the probability that Susan will randomly select a prime number on her next try? Put your answer as a decimal, fraction, percent, and on a number line.

30. Thomas has 4 red, 2 green, and 2 yellow marbles in a bag. Without looking, he reaches in the bag, pulls out a green marble, and puts it on a table. He reaches back into the bag. What is the probability Thomas will pull out a yellow marble?

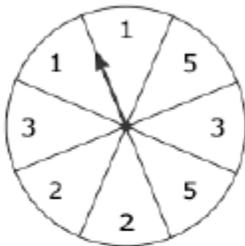
- a.  $\frac{2}{7}$       b.  $\frac{1}{4}$       c.  $\frac{1}{7}$        $\frac{1}{8}$

31. Which spinner has a greater likelihood of landing on 5 rather than 3?

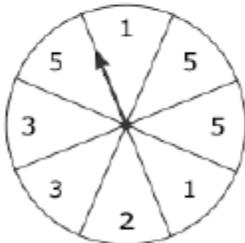
A



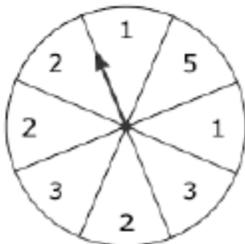
B



C



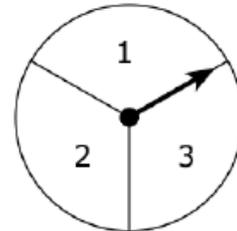
D



32. Four students want to have their picture taken together. They will stand side-by-side for the picture. In how many different ways can the four students be arranged to take a picture? Choose the best answer, and also write out the organized list.

- a. 8  
b. 12  
c. 16  
d. 24

33. Chad will spin the spinner below 600 times and record each result.



About how many times should Chad expect the spinner to land on either 1 or 2?

- a. 100  
b. 200  
c. 300  
d. 400

34. Brian placed each letter of the alphabet on pieces of paper in a box. What is the probability that Brian will randomly pick the letter 'x' or the letter 'y'?

- a.  $\frac{7}{26}$   
b.  $\frac{9}{26}$   
c.  $\frac{2}{13}$   
d.  $\frac{1}{13}$

35. Mrs. Harris has 5 blue, 8 red, 3 green, and 7 yellow candies in a bag. If Mrs. Harris randomly selects a candy, what is the probability she will select a yellow or blue candy?

- a.  $\frac{5}{23}$   
b.  $\frac{7}{23}$   
c.  $\frac{11}{23}$   
d.  $\frac{12}{23}$