

1. For a certain kind of plant, 70% of the seeds that are planted grow into a flower. If Jenna planted 3 seeds, what is the probability that all of them grow into flowers?

- A 21.0%
- B 34.3%
- C 49.0%
- D 70.0%

2. The list below shows Carmen's collection of state quarters.

- 5 Alaska
- 4 California
- 6 Florida
- 8 Minnesota
- 7 Texas

If Carmen randomly selects one quarter from her collection, what is the probability it is a Minnesota quarter or a Texas quarter?

- A $\frac{1}{2}$
- B $\frac{1}{3}$
- C $\frac{2}{5}$
- D $\frac{7}{15}$

3. Jennie is playing a game in which she rolls a six-sided number cube twice in a row. The cube is labeled with the numbers 1 – 6. If either roll is an even number, Jennie gets 100 extra points. Which statement correctly describes the possible outcomes of Jennie's rolls?

- A There are 36 possible outcomes and 27 of them contain at least 1 even number.
- B There are 36 possible outcomes and 18 of them contain at least 1 even number.
- C There are 12 possible outcomes and 6 of them contain at least 1 even number.
- D There are 12 possible outcomes and 2 of them contain at least 1 even number.

4. Lacey is playing a game with a spinner. The spinner has 4 red sections, 5 blue sections, and 2 yellow section. There are 11 sections on the spinner. All of the sections are the same size. What is the probability of the spinner landing on a red section on Lacey's first spin and a yellow section on her second spin?

A $\frac{6}{121}$

B $\frac{8}{121}$

C $\frac{4}{11}$

D $\frac{6}{11}$

5. Wanda will flip a coin four times. What is the probability that Wanda's flips will all land on tails?

A $\frac{1}{2}$

B $\frac{1}{4}$

C $\frac{1}{8}$

D $\frac{1}{16}$

6. Daniel has five tiles, numbered 1 to 5, in a box.

- He randomly pulls out a tile and records the number.
- He places the tile back into the box.
- He then pulls out another tile and records the number.

What is the probability the sum of the numbers on the two tiles is 8?

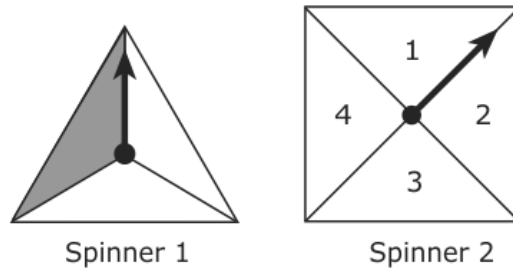
A $\frac{1}{25}$

B $\frac{3}{25}$

C $\frac{1}{5}$

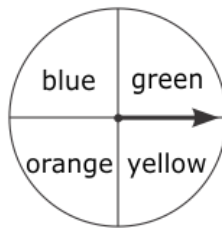
D $\frac{3}{5}$

7. What is the probability of landing in an unshaded region on Spinner 1 and on the number 4 on Spinner 2?



- A $\frac{1}{12}$
- B $\frac{1}{7}$
- C $\frac{1}{6}$
- D $\frac{1}{4}$

8. Jonathan rolls a number cube labeled 1 through 6 and spins the spinner below.



What is the probability the number cube will show 4 and the spinner will land on orange?

- A $\frac{1}{4}$
- B $\frac{1}{6}$
- C $\frac{1}{10}$
- D $\frac{1}{24}$

9. Jenny is getting dressed for school.

- She has 2 pairs of black pants, 1 pair of brown pants, and 2 pairs of blue pants in her closet.
- She also has 2 pink T-shirts and 3 blue T-shirts in her closet.
- Without looking, Jenny pulls out one pair of pants and one T-shirt from her closet.

What is the probability that Jenny pulls out a pair of black pants and a blue T-shirt?

- A** $\frac{2}{3}$
- B** $\frac{5}{10}$
- C** $\frac{6}{25}$
- D** $\frac{5}{25}$

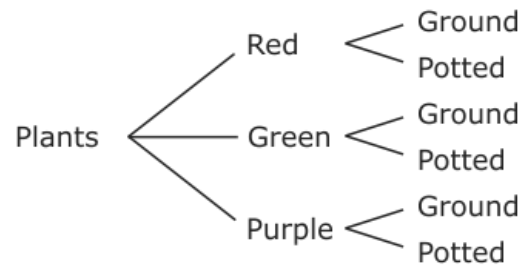
10. Jacob is buying ice cream.

- He can choose one flavor of ice cream: chocolate, strawberry, vanilla, or rocky road.
- He can put his ice cream in a sugar cone, waffle cone, or a cup.

What is the probability Jacob will choose chocolate ice cream in a waffle cone?

- A** 1 out of 4
- B** 1 out of 12
- C** 2 out of 7
- D** 2 out of 12

11. What is the probability of randomly selecting a purple plant out of all the plant choices below?



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

12. Ted has 5 cards, labeled 1 through 5, lying on a table.

- Without looking, he picks a card, looks at the number, and then puts the card back on the table.
- He does this twice.

What is the probability that Ted picks an even-numbered card first, then the number 5 card second?

- A $\frac{4}{25}$
- B $\frac{3}{25}$
- C $\frac{2}{25}$
- D $\frac{1}{25}$

13. 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, and then puts the card back in the bag. If Jessica does this 3 times, what is the probability she pulls out the X card first, then the Y card, and then the Z card?

A $\frac{1}{27}$

B $\frac{1}{9}$

C $\frac{1}{6}$

D $\frac{1}{3}$

14. James rolls a number cube, with sides labeled 1 through 6, two times. What is the probability James will roll an even number the first roll, and roll a number greater than 4 the second roll?

A $\frac{1}{2}$

B $\frac{1}{6}$

C $\frac{1}{18}$

D $\frac{1}{36}$

15. Robert will toss 3 coins at the same time. What is the probability that 2 of the coins will land on heads and the other coin will land on tails?

A $\frac{1}{2}$

B $\frac{1}{8}$

C $\frac{3}{8}$

D $\frac{3}{4}$

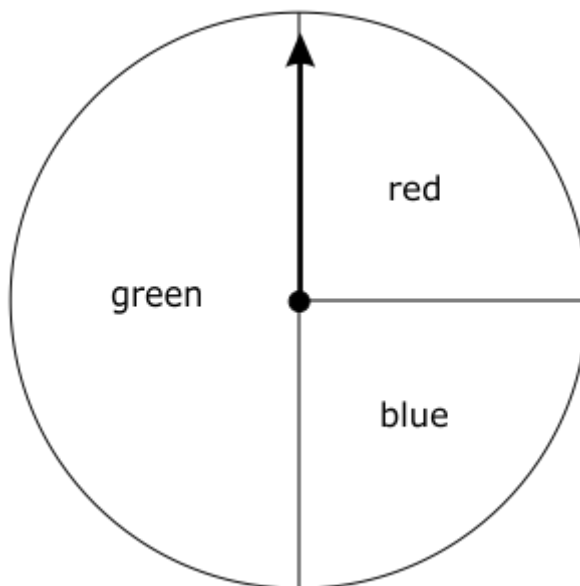
17. A blue number cube and a green number cube are rolled. Both number cubes have the numbers 1 through 6 on them. What is the probability of rolling a number greater than 3 on the blue cube and a number less than 4 on the green cube?

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

B. $\frac{1}{4}$

C. $\frac{1}{36}$

18. Michael spins the spinner below two times.



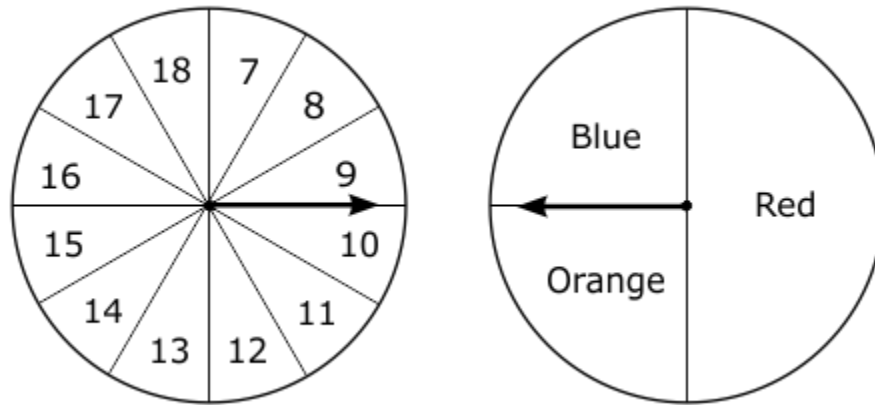
What is the probability the spinner will land on green the first spin and blue the second spin?

A. $\frac{1}{6}$

B. $\frac{1}{8}$

C. $\frac{1}{9}$

19. Tyler spins each spinner below one time.



What is the probability of Tyler's spins landing on a number less than 11 and on red?

A. $\frac{1}{10}$

B. $\frac{1}{9}$

C. $\frac{1}{6}$

D. $\frac{1}{5}$

20. Four students volunteer to help Ms. Glascoe hand out papers, but she needs only two students. Their ages are 11, 12, 13, and 14. Ms. Glascoe will randomly select one of the four students and then randomly select a second student from the

remaining three. What is the probability that the first student Ms. Glascoe selects is younger than the second student she selects?

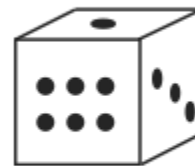
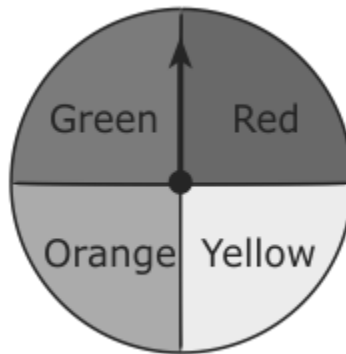
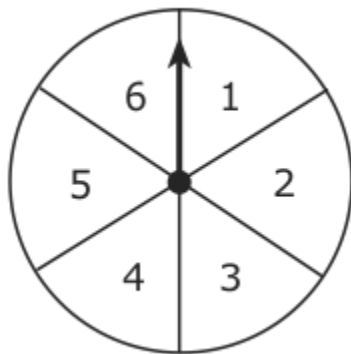
A. $\frac{1}{12}$

B. $\frac{2}{12}$

C. $\frac{4}{12}$

D. $\frac{6}{12}$

21. What is the probability of spinning a 3 on the first spinner, the color orange on the second spinner, and rolling an even number on a fair number cube?



A. $\frac{1}{12}$

B. $\frac{1}{16}$

C. $\frac{1}{24}$

D. $\frac{1}{48}$

22. An art class has 9 seventh graders and 16 eighth graders. If 2 students are randomly asked to display their work, what is the probability that a seventh grader will be chosen first and an eighth grader will be chosen second?

A. $\frac{1}{25}$

B. $\frac{3}{25}$

C. $\frac{6}{25}$

D. $\frac{144}{625}$

23. There are 7 cookies in a jar, as listed below. The cookies are all the same size and shape.

- 3 snickerdoodles
- 4 gingersnaps

One cookie is randomly selected from the jar and not replaced. Then a second cookie is randomly selected from the jar and not replaced. What is the probability they are both gingersnaps?

A. $\frac{7}{12}$

B. $\frac{8}{35}$

C. $\frac{12}{42}$

D. $\frac{12}{49}$

24. Carmen will roll a number cube, labeled 1 through 6, twice. What is the probability Carmen will roll an odd number both times?

A. $\frac{1}{12}$

B. $\frac{1}{6}$

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

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

25. Rachel will toss 2 coins at the same time. What is the probability that both coins will land on heads?

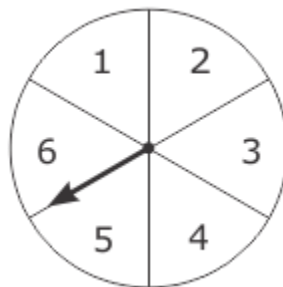
A. $\frac{2}{3}$

B. $\frac{1}{2}$

C. $\frac{1}{3}$

D. $\frac{1}{4}$

26. Michael spins the spinner below twice.



What is the probability the spinner will land on the number 4 for both spins?

A. $\frac{1}{6}$

B. $\frac{1}{9}$

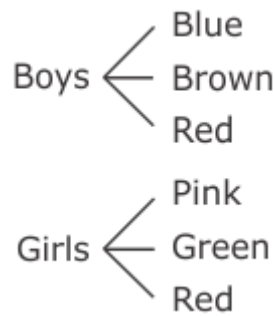
C. $\frac{1}{12}$

D. $\frac{1}{36}$

27. At Taylor Street School, 40% of the students bought lunch in the cafeteria today. Of the students who bought lunch in the cafeteria today, 30% chose pizza as their entree. If a student is chosen at random, what is the probability that she or he bought lunch in the cafeteria and chose pizza as an entree?

- A. 10%
- B. 12%
- C. 35%
- D. 70%

28. 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?

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

D. $\frac{1}{8}$

29. Three coins will be tossed in the air at the same time. What is the probability that all three coins will land showing heads?

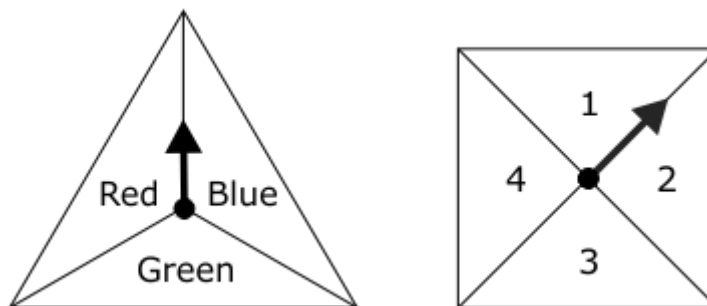
A. $\frac{1}{9}$

B. $\frac{1}{8}$

C. $\frac{1}{6}$

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

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



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

A. $\frac{1}{12}$

B. $\frac{1}{7}$

C. $\frac{2}{7}$

D. $\frac{3}{12}$

31. Laura will roll a number cube, labeled 1 through 6, and flip a coin. What is the probability the number cube will land on 4 and the coin will land on tails?

A. $\frac{2}{3}$

B. $\frac{1}{2}$

C. $\frac{1}{6}$

D. $\frac{1}{12}$

32. Dennis will roll two number cubes once. Each cube is labeled 1 to 6. What is the probability that the sum of the cubes will be an odd number?

A. $\frac{1}{4}$

B. $\frac{1}{3}$

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

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

33. Two coins are flipped. What is the probability of both coins landing on heads?

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

B. $\frac{1}{3}$

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

34. David has a red and a blue number cube each labeled 1 to 6. He will roll both number cubes at the same time. What is the probability David will roll a 6 on the red cube and an even number on the blue cube?

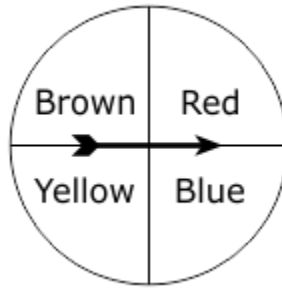
A. $\frac{1}{36}$

B. $\frac{1}{18}$

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

D. $\frac{1}{8}$

35. Bruce will spin the spinner below 2 times.



What is the probability Bruce's second spin will land on the same color that the first spin landed on?

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

B. $\frac{1}{4}$

C. $\frac{1}{8}$

D. $\frac{1}{16}$

36. Brandon will roll 2 number cubes, each labeled 1 to 6. What is the probability Brandon's roll will have a sum of 4?

A. $\frac{1}{36}$

B. $\frac{1}{12}$

C. $\frac{1}{9}$

D. $\frac{1}{6}$

37. David will toss one coin three times. What is the probability that the coin will land on heads only one time?

A. $\frac{1}{8}$

B. $\frac{1}{3}$

C. $\frac{3}{8}$

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

38. Anthony rolls two number cubes, each numbered 1 to 6. What is the probability the sum of the two numbers Anthony rolls is 8?

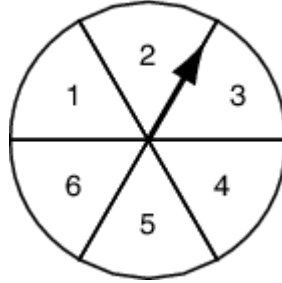
A. $\frac{1}{36}$

B. $\frac{2}{36}$

C. $\frac{5}{36}$

D. $\frac{8}{36}$

39. Diane will spin this spinner.



Part A. What is the probability Diane will spin a number greater than 5 or an odd number?

Part B. Design a spinner with at least 5 sections in which the probability of spinning a 5 or an even number is $\frac{1}{3}$.

Use words, numbers, and/or pictures to show your work.

40. Mr. Lenox has assigned a report on a different mathematician to each of the 18 students in his class.

- To select the mathematician for the report, each student will draw a name from a bag containing the names of 20 different mathematicians.
- The names are not replaced in the bag once they are removed.
- Two of the mathematicians are Pythagoras and Albert Einstein.

What is the probability that the first student will select Pythagoras and the second student will select Albert Einstein?

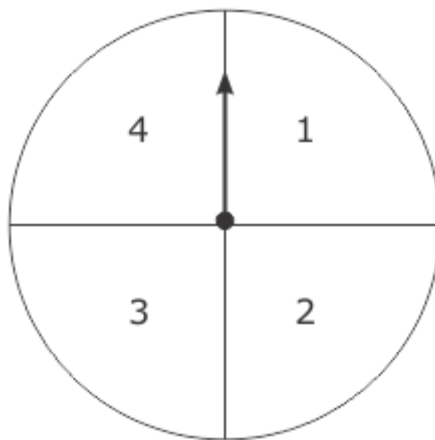
A. $\frac{1}{10}$

B. $\frac{1}{306}$

C. $\frac{1}{380}$

D. $\frac{1}{400}$

41. At a school carnival, Abbey spins the spinner below two times. She needs to spin a 2 and a 3, in any order, to win a prize.



What is the probability of Abbey winning a prize?

A. $\frac{1}{16}$

B. $\frac{1}{8}$

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

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

42. George will toss 3 coins at the same time. What is the probability George's toss will result in all tails?

A. $\frac{1}{3}$

B. $\frac{1}{4}$

C. $\frac{1}{6}$

D. $\frac{1}{8}$

43. Sue will roll a number cube, labeled 1 through 6, and toss a coin. What is the probability Sue will roll an even number and her coin will land on heads?

A. $\frac{1}{12}$

B. $\frac{1}{8}$

C. $\frac{1}{6}$

D. $\frac{1}{4}$

44. Two number cubes, each with 6 sides marked 1, 2, 3, 4, 5, and 6, are rolled at the same time. What is the probability of both of the number cubes showing a 5?

A. $\frac{1}{36}$

B. $\frac{1}{18}$

C. $\frac{5}{36}$

D. $\frac{1}{6}$

45. Two spinners are equally divided into red, blue, yellow, and green. Marcus and Jenny each spin one spinner at the same time. What is the probability of both spinners landing on green?

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

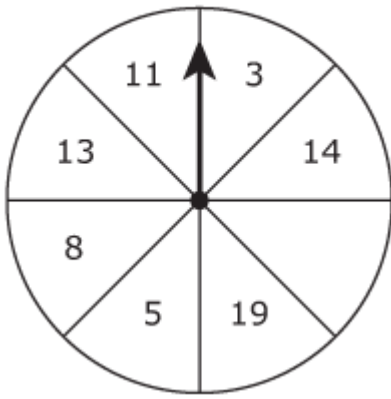
B. $\frac{1}{4}$

C. $\frac{1}{8}$

D. $\frac{1}{16}$

46. The spinner shown below has eight equal sections. It must be spun two times during one turn in a game. The spinner is worn and has a number missing.

Spinner Title



If the probability of spinning an even number and then spinning a number greater than 10 is $\frac{1}{8}$, which could be the missing number?

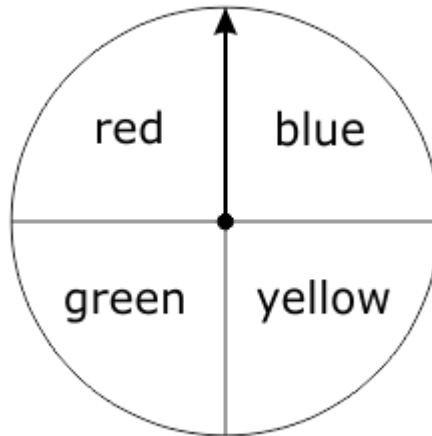
- A. 2
- B. 7
- C. 12
- D. 17

47. Jeremy will toss a coin 3 times. What is the probability Jeremy's coin will land on heads for each toss?

- A. $\frac{7}{8}$
- B. $\frac{5}{8}$
- C. $\frac{1}{2}$

D. $\frac{1}{8}$

48. Sean will spin the spinner below two times.



What is the probability the spinner will land on red both times?

A. $\frac{1}{16}$

B. $\frac{1}{8}$

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

49. Brian will roll a number cube, labeled 1 to 6, twice. What is the probability Brian will roll a 6 both times?

A. $\frac{1}{36}$

B. $\frac{1}{18}$

C. $\frac{1}{6}$

D. $\frac{1}{4}$

50. 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?

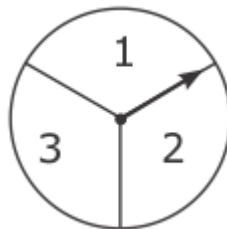
A. $\frac{1}{25}$

B. $\frac{4}{25}$

C. $\frac{6}{25}$

D. $\frac{9}{25}$

51. Harold will spin the spinner below twice.



What is the probability that Harold's two spins will add up to 5?

A. $\frac{1}{9}$

B. $\frac{2}{9}$

C. $\frac{1}{3}$

D. $\frac{2}{3}$