SAMPLE PAGES FOR

THE READY EOG ASSESSMENT

THE COMPETITIVE EDGE

SEVENTH GRADE MATHEMATICS

with COMMON CORE STATE STANDARDS

2013 EDITION

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CONTEMPORARY PUBLISHING COMPANY OF RALEIGH, INC.

CPC

5849 Lease Lane, Raleigh, NC 27617 • (919) 851-8221
www.contemporarypublishing.com

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PART I—PROBABILITY

You can measure the chances of an event happening with **probability**. The two kinds of probability you will study in the 7th grade are **theoretical** and **experimental**.

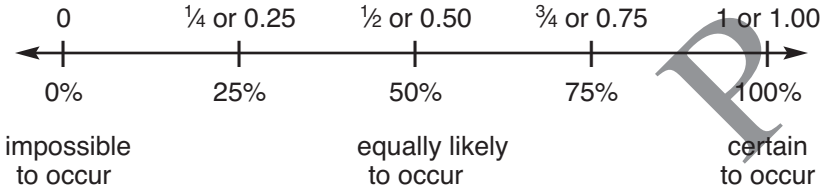
Theoretical Probability

Theoretical probability is the probability that a certain outcome will occur. Theoretical probability is determined by noting all the possible outcomes theoretically, and determining how likely the given outcome is. This type of probability is based on calculations.

This formula can be used to find the probability (P) that an event can occur.

$$P_{\text{(probability)}} = \frac{\text{number of favorable outcomes}}{\text{number of possible outcomes}}$$

The probability of an event is always between 0 and 1. The closer a probability is to 1, the more likely it is to occur.



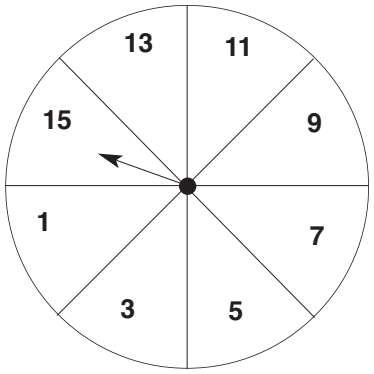
EXAMPLES

What is the probability (chance) that you would spin an odd number?

$$P_{\text{(probability)}} = \frac{8 \text{ (8 odd numbers)}}{8 \text{ (8 outcomes)}} = \frac{1}{1}$$

$$1 \overline{)\,1.00}$$
$$-1$$
$$0$$
$$-0$$
$$00$$
$$-0$$
$$0$$

1.00 = 100% (chance of spinning an odd number)



What is the probability of spinning a number larger than 7?

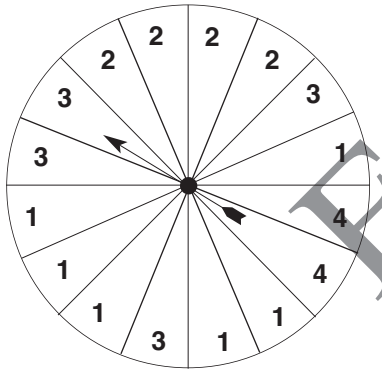
$$P = \frac{4 \text{ (numbers larger than seven)}}{8 \text{ (8 outcomes)}} = \frac{1}{2}$$

$$2 \overline{)\,1.00}$$
$$-0$$
$$10$$
$$-10$$
$$00$$
$$-0$$
$$0$$

0.50 = 50% (chance of spinning a number larger than 7)

Probabilities can be shown as fractions or percents.

On which number does the spinner have the least probability of landing? On which number does the spinner have the greatest probability of landing?



Find the probability of landing on each number.

$$P(1) = \frac{\text{number of favorable outcomes}}{\text{number of possible outcomes}} = \frac{6}{16} = \frac{3}{8}$$

$$P(2) = \frac{\text{number of favorable outcomes}}{\text{number of possible outcomes}} = \frac{4}{16} = \frac{1}{4}$$

$$P(3) = \frac{\text{number of favorable outcomes}}{\text{number of possible outcomes}} = \frac{4}{16} = \frac{1}{4}$$

$$P(4) = \frac{\text{number of favorable outcomes}}{\text{number of possible outcomes}} = \frac{2}{16} = \frac{1}{8}$$

The least fraction is $\frac{1}{8}$, so the spinner has the least probability of landing on 4. The greatest fraction is $\frac{3}{8}$, so the spinner has the greatest probability of landing on 1.

Experimental Probability

Experimental probability is based on what actually occurs when conducting a probability experiment. Experimental probability is also called *relative frequency*.

To find the experimental probability of an event, use this formula:

$$\text{exp P(event)} = \frac{\text{number of times an event occurs}}{\text{number of trials}}$$

EXAMPLES

The table shows the results of an experiment in which a disk (blue on one side and red on the other) was tossed. Find the experimental probability of tossing this disk and getting a red side for this experiment.

Toss	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Outcome	R	B	B	R	B	R	B	R	R	B	R	B	B	B	R	B	R	B	R	B	R	B	B	B

$$\text{exp P (red)} = \frac{\text{number of times red occurs}}{\text{number of trials}}$$

$$= \frac{10}{24}$$

$$= \frac{5}{12}$$

The experimental probability of getting red is $\frac{5}{12}$.

If the experiment above was continued and the disk was tossed 60 more times, based on the results of the experiment above, how many times would you expect the disk to land on red over the next 60 tosses?

The experimental probability is $\frac{5}{12}$, so multiply this by the number of tosses.

$$\frac{5}{12} \times 60 = \frac{300}{12} = 25$$

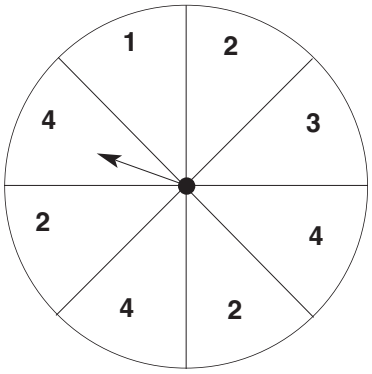
You should expect the disk to land on red 25 times in 60 tosses.

The theoretical probability (what should occur) of tossing a red side of this 2-sided disk is $\frac{1}{2}$. This experiment shows that the experimental probability of tossing a red side is $\frac{5}{12}$. The more trials that are performed, the more likely the experimental probability will be closer to $\frac{1}{2}$ (theoretical probability).

You can predict the number of times you can expect an event to occur if you know the theoretical probability of an event and the number of trials that will take place.

EXAMPLES

About how many times would you expect the spinner to land on an even number in 100 spins?



First, find the theoretical probability of the spinner landing on an even number.

$$P(\text{even}) = P(2 \text{ or } 4) = \frac{6}{8} = \frac{3}{4}$$

Now multiply that probability by the number of events.

$$\frac{3}{4} \times 100 = \frac{300}{4} = 75$$

The spinner should land on an even number about 75 out of 100 times.

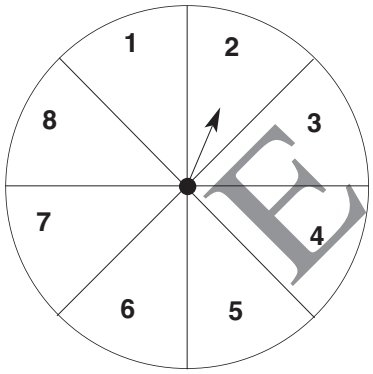
The teacher has eight colors of pencils to give to her students. The colors are black, blue, black/green, blue/white, blue/pink, black/orange, blue/green, and blue/yellow. Find the probability of a student choosing a pencil with blue on it, and the probability of a blue/pink pencil being chosen.

$$P(\text{a pencil with blue on it being chosen}) \frac{\text{number of pencils with blue}}{\text{number of pencils}} = \frac{5}{8}$$

$$P(\text{a blue/pink pencil being chosen}) \frac{\text{number of blue/pink}}{\text{number pencils}} = \frac{1}{8}$$

The probability of a pencil with blue on it being chosen is $\frac{5}{8}$. The probability of a blue/pink pencil being chosen is $\frac{1}{8}$.

A die numbered 1 through 6 is tossed and this spinner is spun. What is the probability of getting a number greater than 4 on the die? On the spinner? Are their outcomes equally likely?



Probability of spinning a number greater than 4:
5, 6, 7, and 8 are greater than 4. There are 4 favorable outcomes.

P(greater than 4 on spinner) = $\frac{4}{8} = \frac{1}{2}$

Probability of tossing a number greater than 4 on the die:
5 and 6 are greater than 4. There are 2 favorable outcomes.

P(greater than 4 on the die) = $\frac{2}{6} = \frac{1}{3}$

The outcomes are not equally likely (Outcomes are different.) —⅓ on die and ½ on spinner.

PRACTICE

Use the following to answer #1–6.

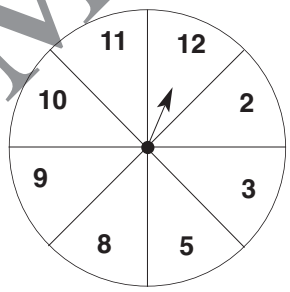
☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆

R G R G R B R W P Y Y

What is the probability (in fraction form) of choosing _____?

1. a red (R) star _____
2. a blue (B) star _____
3. a yellow (Y) star _____
4. a white (W) star _____
5. a green (G) star _____
6. a pink (P) star _____

Use this spinner to answer questions 7–14.



7. P(8) _____
8. P(less than 2) _____
9. P(even) _____
10. P(odd) _____
11. P(O) _____
12. P(greater than 6) _____

13. Is it more likely, less likely, or equally likely that an even number will be spun than an odd number?

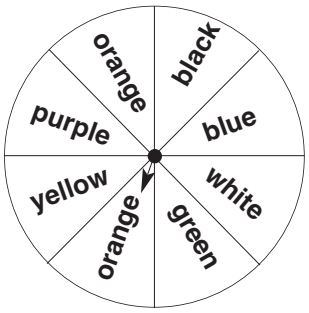
14. Is it likely or unlikely than a number less than 3 will be spun? Explain.

15. A disk has one green side and one red side. What is the theoretical probability of it being flipped and landing with the green side up? Red side up?

16. If the red and green disk is flipped 100 times, about how many times will it land with the red side up? Green side up?

17. If a die is rolled one hundred twenty times, what's the expected number of times that number 3 or 5 will be facing upward?

18. Suppose you spin this spinner seven times and spin a purple four times in a row. What is the theoretical probability of spinning a purple on the next spin?



19. Jeremiah's homework contains a matching section that contains 12 items and a multiple choice selection that has 5 answer choices. What is the probability of getting a matching section question correct? What is the probability of getting the multiple choice selection correct? Are the outcomes equally likely? Explain your answer.

20. Conduct an experiment to determine the experimental probability of a coin landing on heads. Conduct at least 40 trials and record your results in a table. What is the relative frequency of the coin landing on heads?

PART 2— INDEPENDENT AND COMPOUND EVENTS

A **compound event** consists of two or more simple events. In **independent events**, the outcome of one event does not influence the outcome of a second event.

Probability of an Independent Event

The probability of two independent events can be found by multiplying the probability of the first event by the probability of the second event.

P (A and B) = P(A) • P(B)

EXAMPLE

Peter selects one ticket at random from a group of sports tickets and a group of concert tickets. The group of sports tickets contains 3 basketball tickets and a hockey ticket. The group of concert tickets contains 2 orchestra tickets and a jazz concert ticket. What is the probability that he will select a hockey ticket and an orchestra ticket?

The ticket he chooses from the first group does not affect the ticket he chooses from the second group. The outcome of one event does not affect the outcome of the other event. They are *independent* events.

P(hockey) = $\frac{1}{4}$ P(orchestra) = $\frac{2}{3}$

P(hockey and orchestra) = P(hockey) • P(orchestra)

$\frac{1}{4} \bullet \frac{2}{3} = \frac{2}{12} = \frac{1}{6}$

The probability that the two events will occur is $\frac{1}{6}$.

PRACTICE

Use the chart below that lists the number and types of bubble gum found in two boxes. A regular bubble gum is chosen at random. Then a sugar free bubble gum is chosen at random. Find the probability of each outcome.

Boxes	Fruit Flavor	Cotton Candy Flavor	Regular Flavor
Regular Bubble Gum	4	6	2
Sugar Free Bubble Gum	2	6	6

1. a regular bubble gum fruit flavor and a sugar free bubble gum fruit flavor

_____

2. a regular bubble gum fruit flavor and a sugar free bubble gum cotton candy flavor

_____

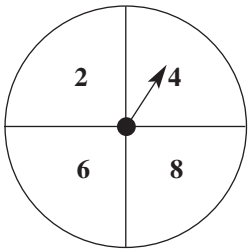
3. a regular flavor regular bubble gum and a sugar free bubble gum fruit flavor

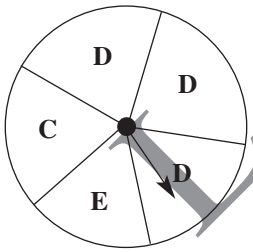
_____

4. a regular bubble gum cotton candy flavor and a regular flavor sugar free bubble gum

_____

Each spinner is spun once. Find the probability.





5. P(2,C) = _____
6. P(4,D) = _____
7. P(8,E) = _____
8. P(2,D) = _____
9. P(4 or 8 and a vowel) = _____
10. P(6 and a consonant) = _____

A coin is tossed, then a die is rolled. Find each probability.

11. P(heads and 6) = _____
12. P(tails and 5) = _____
13. P(heads and number less than 5) = _____
14. P(tails and a prime number) = _____
15. P(heads and 3) = _____
16. P(tails and an odd number) = _____
17. P(heads and a number greater than 3) = _____

Probability of Compound Events

EXAMPLE

What is the probability of throwing a 3 or a 4 when you throw a die? Both events cannot happen at the same time, so these events are mutually exclusive.

P(A or B) = P(A) + P(B)
Event A is throwing a 3.
Event B is throwing a 4.
P(3 or 4) = P(3) + P(4)

$$\frac{1}{6} + \frac{1}{6} = \frac{2}{6} = \frac{1}{3}$$

PRACTICE

A die is rolled.

1. What is P(3 or 5)? _____
2. What is P(even or odd)?_____
3. What is P(1 or 6)?_____
4. What is P(4 or prime)?_____
5. What is P(3 or 4)?_____

A card is drawn from these cards.

A	B	C	D	E	F	G

6. What is P(E or a consonant)?_____

A coin is tossed and a die is rolled.

7. What is P(heads or 3)? _____
8. What is P(tails or 4)?_____
9. What is P(tails or less than 3)? _____
10. What is P(heads or prime)?_____
11. What is P(heads or even)?_____

A ribbon is selected at random from a bag containing 5 white ribbons, 6 red ribbons, and 4 blue ribbons.

12. What is P(red or blue)? _____
13. What is P(red or white)? _____
14. What is P(white or blue)? _____
15. What is P(blue or not white)? _____

Probability of Dependent Events

When two events are dependent, the first event's outcome will change the size of the sample and affect the probability of the second event. The probability of both events occurring is the product of the probability of A and the probability of B after A occurs.

P(A and B) = P(A) • P(B following A)

EXAMPLE

What is the probability of drawing 2 red marbles (one marble at a time) from a box that contains 3 red marbles and 2 black marbles? (Do not replace marble after first draw.)

$\frac{3}{5}$ 3 red marbles
5 total marbles in box

1. Find the probability of drawing a red marble on the first draw.

$\frac{2}{4}$ 2 red marbles
4 total marbles in box

2. Reduce the sample by 1 because one drawing has been made. The number of possible favorable (red) outcomes must be reduced by 1 since a red marble may have been drawn.

$\frac{3}{5} \times \frac{2}{4} = \frac{6}{20} = \frac{3}{10}$

3. Multiply the probabilities.

PRACTICE

Find the probability.

Using a deck of cards, find the probability of choosing a card from column A (Do not replace in deck.) and then a card from column B.

	A	B	Probability
1.	queen	queen	_____
2.	black five	black five	_____
3.	3 of hearts	3 of hearts	_____
4.	black card	black card	_____
5.	red or black card	red or black card	_____
6.	jack of spades	queen of spades	_____
7.	black ace	red ace	_____
8.	a spade	a spade	_____
9.	a heart	a diamond	_____
10.	4 of clubs	3 of clubs	_____

Using a bag containing 3 yellow marbles, 2 green marbles, and 6 orange marbles, find the probability of choosing a marble from column A (Do not replace in bag.) and then from column B.

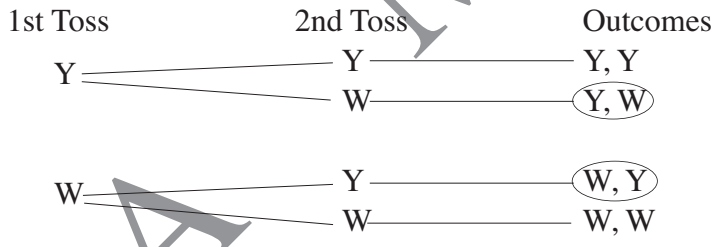
	Column A	Column B	Probability
11.	a yellow marble	a yellow marble	_____
12.	a green marble	a green marble	_____
13.	an orange marble	an orange marble	_____
14.	a yellow marble	a green marble	_____
15.	a yellow marble	an orange marble	_____
16.	a green marble	an orange marble	_____

Tree Diagrams

Tree diagrams use branches to show all possible outcomes of an event.

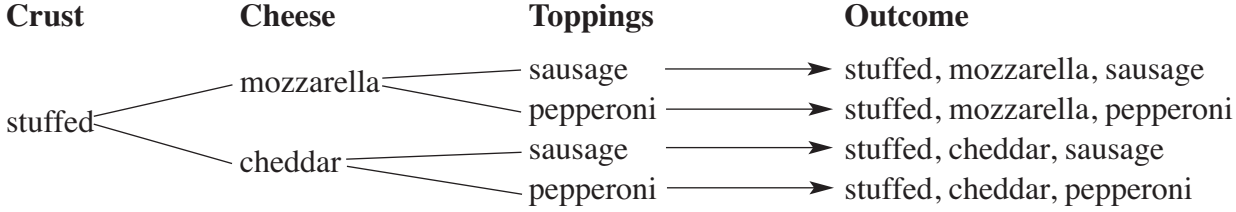
EXAMPLES

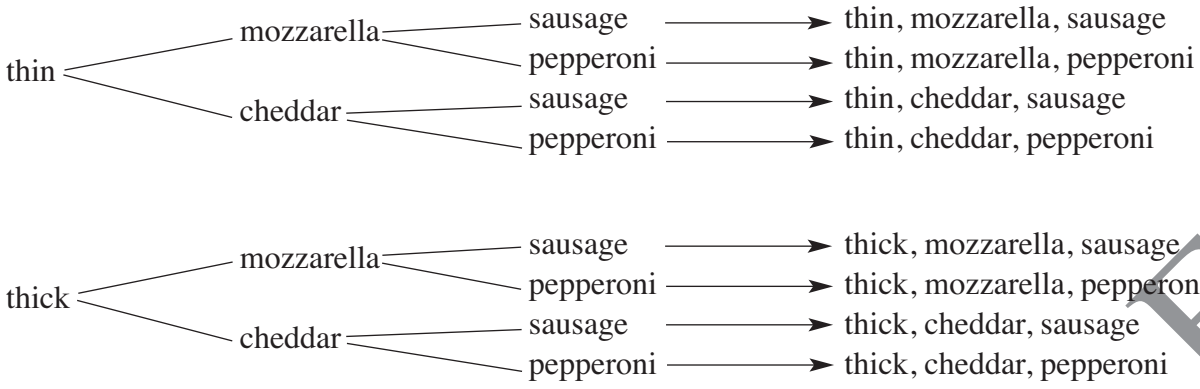
A plastic frisbee has one yellow side and one white side. If it is tossed 2 times, what are the chances of it landing showing one yellow side and one white?



There are 4 outcomes. ***Two*** *of these contain a yellow and white*.

Massey is going to buy a pizza. She can choose from three types of crust (stuffed, thin, thick), two types of cheese (mozzarella, cheddar) and two toppings (sausage, pepperoni). What is the probability of her choosing a pizza with thin crust, mozzarella cheese, and pepperoni?





Massey has 12 possible outcomes to choose from. Only one of those outcomes is thin crust, mozzarella cheese, and pepperoni.

Probability of choosing thin crust, mozzarella cheese, and pepperoni is $\frac{1}{12}$.

PRACTICE

1. Draw a tree diagram to show all the possible outcomes when 2 coins are tossed.

2. Draw a tree diagram to show all the possible outcomes when you have a choice of chicken or steak with rice, fries, or baked potato.

3. Draw a tree diagram to show all the possible outcomes when you toss a penny and a die at the same time.

Simulations

You can use a **simulation** to solve a problem by carrying out an experiment similar to a real situation so that you can see the outcomes.

A **table of random digits** can be used as a simulation tool to solve problems with compound events.

EXAMPLE

There is a 30% chance of Elaine going jogging on five consecutive days in a week. Use the random number table where the digits 1, 2, and 3 represent Elaine going jogging and the digits 0, 4, 5, 6, 7, 8 and 9 represent Elaine going home to find the probability of Elaine not going jogging on any of the five consecutive days of the next week.

Random Digits

43090	40109	62931	00481
13728	58019	06809	
39408	36494	13612	

Trial 1: 43090 Went jogging 1 day.
Trial 2: 13728 Went jogging 3 days.
Trial 3: 39408 Went jogging 1 day.
Trial 4: 40109 Went jogging 1 day.
Trial 5: 58019 Went jogging 1 day.
Trial 6: 36494 Went jogging 1 day.
Trial 7: 62931 Went jogging 3 days.
Trial 8: 06809 Went jogging 0 days.
Trial 9: 13612 Went jogging 4 days.
Trial 10: 00481 Went jogging 1 day.

Out of 10 trials, 1 trial had all five days of no jogging by Elaine.

Based on the simulation, the probability of Elaine not going jogging on any of the five consecutive days of the next week is ⅒ or 10%.

PRACTICE

1. There is an 70% chance of Robert passing each of his 6 tests that he took in math. Use the random number table where the digits 1, 2, 3, 4, 5, 6, and 7 represent "pass" and 8, 9, and 0 represent "fail." Find the probability of Robert failing in all 6 tests.

Random Digits

009989	113424	089099	809999	453778
134871	787650	312121	676675	321212

2. There is a 30% chance of Beverly not going to her dad's office after school on each of the next 7 days. Use the random number table to find the probability of Beverly not going to her dad's office after school on all 7 days, where the digits 1, 2, and 3 represent Beverly not going to her dad's office and 4, 5, 6, 7, 8, 9, and 0 represent Beverly going to his office.

Random Digits

1223221	1223331	0800998	4215671	8667431
0990098	2311311	7584321	1233212	0808090

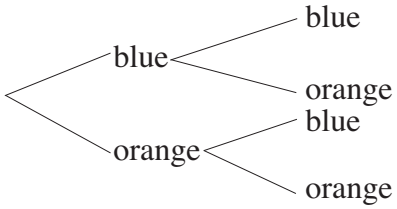
3. There is a 60% chance of Bill playing video games on 4 consecutive days. Use the random number table where the digits 1, 2, 3, 4, 5, and 6 represent Bill playing a video game and 7, 8, 9, and 0 represent Bill not playing a video game to find the probability of Bill playing a video game on exactly 3 of the next 4 days.

5455	2517
7218	5765
6746	6875
6664	2154
8788	7576

Review

1. What is the probability that a roll of a die will show 2?
   a. $\frac{4}{6} = \frac{2}{3}$
   b. $\frac{1}{6}$
   c. $\frac{0}{6}$
   d. $\frac{1}{2}$

2. This tree diagram shows the possibilities for choosing a blue or orange disk when choosing a disk twice, returning the first disk after choosing the first time.



   What are the chances that one choice is blue and one choice is orange?
   a. $\frac{3}{4}$
   b. $\frac{1}{2}$
   c. $\frac{1}{4}$
   d. $\frac{1}{3}$

3. How many outcomes are possible if you toss 4 coins?
   a. 8
   b. 4
   c. 16
   d. 32

4. John, David and Sam are sitting on a bench. In how many different orders could they be sitting?
   a. 6
   b. 3
   c. 9
   d. 5

Use for #5 – 7.

S	S	W	W	W	B

5. What is the probability of drawing an S ?
   a. $\frac{3}{4}$
   b. $\frac{2}{6} = \frac{1}{3}$
   c. $\frac{5}{6}$
   d. $\frac{3}{6} = \frac{1}{2}$

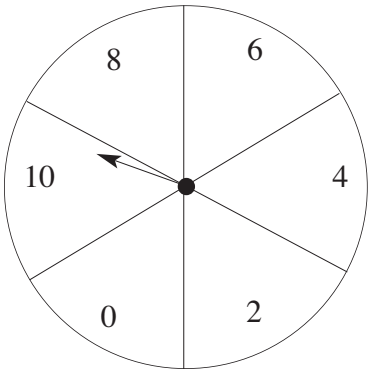
6. What is the probability of drawing two W 's in 2 draws (Do not replace first letter.)?
   a. $\frac{3}{4}$
   b. $\frac{6}{36} = \frac{1}{6}$
   c. $\frac{9}{36} = \frac{1}{4}$
   d. $\frac{6}{30} = \frac{1}{5}$

7. What is the probability of drawing a B ?
   a. $\frac{2}{6} = \frac{1}{3}$
   b. $\frac{1}{6}$
   c. $\frac{5}{6}$
   d. $\frac{4}{6} = \frac{2}{3}$

8. If you have a pink shirt, a sapphire shirt, a lime shirt, and a tangerine shirt, what is the probability of you choosing a tangerine shirt?
   a. 1
   b. $\frac{2}{4} = \frac{1}{2}$
   c. $\frac{1}{3}$
   d. $\frac{1}{4}$

9. Use the shirts from number 8 to find the probability of choosing a sapphire shirt or a lime shirt?
   a. $\frac{3}{4} = 75\%$
   b. $\frac{2}{4} = \frac{1}{2} = 50\%$
   c. $\frac{1}{4} = 25\%$
   d. $\frac{1}{8} = 12.5\%$

Use for #10 – 12.



10. What is the probability of spinning a 6?
    a. $\frac{0}{6}$
    b. $\frac{1}{6}$
    c. $\frac{3}{6} = \frac{1}{2}$
    d. $\frac{4}{6} = \frac{2}{3}$

11. What is the probability of spinning an 8 or a 10?
    a. $\frac{2}{6} = \frac{1}{3}$
    b. $\frac{0}{6}$
    c. $\frac{1}{6}$
    d. $\frac{3}{6} = \frac{1}{2}$

12. What is the probability of spinning a number less than 6?
    a. $\frac{3}{6} = \frac{1}{2} = 50\%$
    b. $\frac{4}{6} = \frac{2}{3} = 66\ ⅔\%$
    c. $\frac{2}{6} = \frac{1}{3} = 33\ ⅓\%$
    d. $\frac{0}{6} = 0\%$

13. If a bag contains 4 blue balls, 5 black balls, and 1 purple ball, what is the probability of choosing a blue ball in each of two draws (Do not replace first ball.)?
    a. $\frac{2}{10} = \frac{1}{5} = 20\%$
    b. $\frac{8}{45} = 17.8\%$
    c. $\frac{12}{90} = \frac{2}{15} = 13\ ⅓\%$
    d. $\frac{3}{250} = 1.2\%$

14. There are 4 kinds of ice cream (mint, walnut, cotton candy and cheesecake) and 4 kinds of toppings (pineapple, sprinkles, pecans, coconut). How many possible choices could you have with one ice cream and one topping?
    a. 16
    b. 8
    c. 32
    d. 20

15. How many different odd sums can be made when rolling 2 dice?
    a. 12
    b. 11
    c. 9
    d. 10

16. There are 3 striped marbles in a bag of 12 marbles. What is the probability of choosing a striped marble?
    a. $\frac{1}{3}$
    b. $\frac{6}{12} = \frac{1}{2}$
    c. $\frac{3}{12} = \frac{1}{4}$
    d. $\frac{1}{12}$

17. There are 10 purple beads, 6 gray beads, and 4 black beads in a jar. What is the probability of picking a purple bead?
    a. $\frac{0}{20}$
    b. $\frac{6}{20} = \frac{3}{10}$
    c. $\frac{10}{20} = \frac{1}{2}$
    d. $\frac{4}{20} = \frac{1}{5}$

18. A child has a chance of being a boy or girl. If a woman has 2 boys, what is her chance of having a girl the next time?
    a. There is a 50-50 chance.
    b. There is no way to predict this.
    c. She will have a boy.
    d. She will have a girl.

19. A box contains 15 towels, 3 of which are extra large. What is the probability of picking an extra large towel from the box?
    a. $\frac{15}{3} = 5$
    b. $\frac{0}{15}$
    c. $\frac{3}{15} = \frac{1}{5}$
    d. $\frac{3}{18} = \frac{1}{6}$

20. What is the probability of tossing a coin 1 time and having it show a tail?
    a. $\frac{0}{2}$
    b. $\frac{1}{2}$
    c. 2
    d. 1

21. Carrie wins her cross country meet 25% of the time. What is the probability that she will win her next meet?
    a. $\frac{1}{2}$
    b. $\frac{3}{4}$
    c. $\frac{1}{4}$
    d. $\frac{1}{3}$

22. If 2 coins are tossed, what is the probability of tossing 2 tails?
    a. $\frac{1}{4}$
    b. $\frac{2}{4} = \frac{1}{2}$
    c. $\frac{3}{4}$
    d. $\frac{0}{4}$

23. A barrel contains 16 apples. All 16 apples are Granny Smith. What is the probability of drawing an apple that is a Golden Delicious?
    a. $\frac{16}{16}$
    b. $\frac{13}{16}$
    c. $\frac{0}{16}$
    d. $\frac{1}{16}$

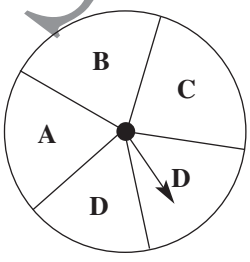
24. If you toss 2 green and blue sided disks, what result should occur most often?
    a. two greens
    b. two blues
    c. one green, one blue
    d. All combinations will occur at the same rate.

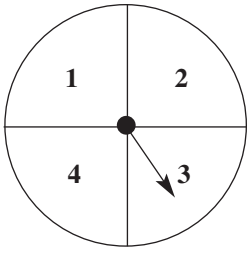
25. Disks numbered 1–17 are in a pail. What is the probability of choosing an odd number?
    a. $\frac{10}{17}$
    b. $\frac{3}{17}$
    c. $\frac{1}{17}$
    d. $\frac{9}{17}$

26. How many different outfits can be made with blue or gray slacks, a blue or pink shirt, and navy or black shoes?
    a. 6
    b. 8
    c. 3
    d. 16

27. A 7th grade class can choose three museums to visit. Their choices are the Science Museum, History Museum, Aviation Museum, and Fossil Museum. Find the number of arrangements if order is not important.
    a. 15
    b. 45
    c. 24
    d. 20

28. Each spinner is spun once. Find the probability P(3 and C).





    a. $\frac{2}{3}$
    b. $\frac{1}{20}$
    c. $\frac{5}{6}$
    d. $\frac{3}{4}$

29. What is the probability of rolling a 4 or 3 on a die?
    a. $\frac{1}{3}$
    b. $\frac{1}{6}$
    c. $\frac{3}{4}$
    d. $\frac{5}{6}$

30. A jar contains 21 pink jelly beans, 12 red jelly beans, 4 black jelly beans, and 18 green jelly beans. Is it more likely, less likely, or equally likely that a pink jelly bean rather than a red jelly bean will be picked out of the jar without looking? Explain your answer.

31. If you flip a coin, what is the theoretical probability of the coin landing heads up? Tails up?

32. Sarah took a national test for placement purposes. The test had one question that had a choice of 5 answers, and one question that had a choice of 2 answers. Are the outcomes of getting the questions correct equally likely? Explain your answer.

33. Rachel is going to buy a new jacket. She can choose the type (hooded, unhooded) the size (M, L), and the color (red, ivory, blue). Draw a tree diagram to show all the choices Rachel has for a jacket. What is the probability of Rachel choosing a medium red hooded jacket?

34. Use the random digits table to answer the questions below.

6208177604	3547019228
1684116832	4360145612
6830273961	6138031459
3999214632	8246091247
4458301246	9783524437

While checking watermelons on a conveyor belt, an inspector finds a rotten melon 30% of the time. Describe, in detail, how to use the random digits' table to find the probability that more than 3 out of 10 watermelons are rotten. What is the probability that more than 3 out of 10 watermelons are rotten?