

The order of these may not exactly match the order on the canvas version.

1. List the sample space by constructing a tree diagram for the experiment of flipping a coin and then spinning a spinner that is made up of 3 equal spots that are red, yellow, and green.

2. A **single card** is selected from a standard 52 card deck. Find the probability that the card is a: (3 dec. places).

a. black jack

b. 9 and a club

c. 9 or a club

d. face card

3. Two dice are rolled. Find the probability that the sum on the two dice is less than 4: (3 dec. places)

4. I get a bag of candy and find that the distribution of colors are yellow 30%, green 25%, blue 30%, and red 15%. I select 1 candy at random find the probability the candy is: (list your answer as a decimal to 2 places)

a. yellow

b. green or blue

c. not red

d. pink

5. At a men's clothing store, 14 men purchased blue sweaters, 10 purchased green sweaters, 11 purchased gray sweaters, and 4 bought black sweaters. If a customer is selected at random, find the probability that he purchased: (3 dec. places)

a. A blue sweater

b. A green or gray sweater

c. A green or black or blue sweater

d. A sweater that was not green

6. The probability that a person owns a car is 0.55, a person owns a truck is 0.13, and that a person owns both a car and a truck is 0.09.

Find the probability that a person owns a car or a truck. (2 dec.)

7. If 80% of all people have brown eyes and 4 people are selected at random, find the probability that all 4 people have brown eyes. Eye color for each person is independent.(3 decimal places)

8. How many different ways can 4 speakers be seated on a stage?

9. A key-code uses the digits 0-9. The key-code requires 3 digits to be used. How many codes are possible if NO repeats of digits are allowed?

10. A committee of 4 people is formed from a group of 14 people. The committee is made up of a president, vice-president, secretary, and a treasurer. How many different committees are possible?

11. How many ways can 3 outfielders be chosen from a group of 12 outfielders?

12. A box contains 13 light bulbs. Two light bulbs are selected and placed in a package to ship away. 5 of these light bulbs are known to be defective. What is the probability that:

a. both light bulbs shipped are good. (3 decimal places)

b. the first light bulb is defective and the second light bulb is good. (3 decimal places)

13. The following table is from a sample of 500 people who participated in the 2000 census. Each member was identified as a high school graduate (or not) and as a homeowner (or not). The two-way table displays the data.

	High School Graduate	Not a High School Graduate	Total
Homeowner	221	119	340
Not a Homeowner	89	71	160
Total	310	190	500

If a single person is randomly selected find the probability that the person is:

a. a high school graduate. (3 decimal places)

b. a homeowner and **not** a high school graduate. (3 decimal places)

c. a homeowner or a high school graduate. (3 decimal places)

d. a high school graduate, given that they do **not** own a home. (3 decimal places)

e. Are the events: homeowner and high school graduate independent? Show a calculation to verify your answer.

14. During a recent paint sale at a hardware store, the number of cans of paint purchased was distributed as shown.

Let X = The number of cans purchased

X	1	2	3	4	5
$P(X)$	0.42	0.27	0.15	0.10	0.06

a. What is the probability a randomly selected purchase was for fewer than 3 cans?

Use the following table to help you with parts b and c if you want to.

X	$P(X)$	$X \cdot P(X)$	$(X - \mu)$	$(X - \mu)^2$	$(X - \mu)^2 \cdot P(X)$
1	0.42				
2	0.27				
3	0.15				
4	0.10				
5	0.06				

b. Find the mean of the probability distribution. (2 decimal places)

c. Find the standard deviation of the probability distribution. (2 decimal places)

15. Determine whether the variable is discrete or continuous.

a. Number of text messages sent in a month

b. Temperatures at a ski resort

- c. Number of phone calls received during one day at a call center
- d. Heights of football players on a local college team

16. Suppose that 70% of American adults under the age of 35 have eaten pizza for breakfast. A random sample of 6 adults under the age is selected. Assume each person is independent from others.

Let x = the number of Adults under the age of 35 who have eaten pizza for breakfast in a group of 6 people.

- a. Find the probability that exactly 5 have eaten pizza for breakfast. (must show formula work). 3 dec. places
- b. Find the probability that more than 4 people have eaten pizza for breakfast. (may use the table)
- c. What are the mean and standard deviation for the sample of 6 adults. (2 dec.)