

1. Write the multiplication rule on the line below.

a)  $P(A \cap B) =$  \_\_\_\_\_

b) In order to use the multiplication rule, event A and event B must be \_\_\_\_\_.

2. Write the formula for compound probability.

$P(A \cup B) =$  \_\_\_\_\_

3. The sum of the probabilities for all outcomes in a sample set is always \_\_\_\_\_.

4. The probability of any event can never be more than \_\_\_\_\_ or less than \_\_\_\_\_.

#5-9. Tribute Flags sells American Flags. The number of flags sold in any given day is normally distributed with a mean of 200 and a standard deviation of 15.

5. Find the probability that the store sells fewer than 186 flags on any single day?

6. The sales vice president of Tribute Flags gets a bonus if more than 210 flags are sold. What is the probability that the store manager will earn the bonus on any single day?

7. Find the probability Tribute Flags sells an average of 201 or more flags in a 7-day work week.

8. Find the proportion of days that Tribute Flags sells between 192 and 206 flags in a single day?

9. The sales manager of Tribute Flags will be fired if mean sales are less than 196 flags in the next 30-day month. What is the probability that the manager is fired at the end of the next month?

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10. Calculate the expected value of Facebook stock given the following discrete random variables and outcomes.

$x$  = state of the economy measured in two categories - "recession" or "boom"

$y$  = another social media site surfaces as competition - "competition" or "no competition"

Both of these variables are independent.

$x$	Recession	Boom
$P(x)$	.35	.65

10a. Find  $P(Boom \cap Competition) =$  \_\_\_\_\_

10b. Find  $P(Boom \cap No.Competition) =$  \_\_\_\_\_

$y$	Competition	No Competition
$P(y)$	.5	.5

10c. Find  $P(Recession \cap Competition) =$  \_\_\_\_\_

10d. Find  $P(Recession \cap No.Competition) =$  \_\_\_\_\_

10e. In calculating Facebook's expected value, consider the following outcomes:

If there is a boom and competition surfaces, Facebook will be worth \$40/share.

If there is a boom and no competition surfaces, Facebook will be worth \$50/share

If there is a recession and competition surfaces, Facebook will be worth \$10/share

If there is a recession and no competition surfaces, Facebook will be worth \$20/share

Facebook Expected Value = \$ \_\_\_\_\_/share

1. The sum of the probabilities for all outcomes in a sample set is always \_\_\_\_\_.
2. The probability of any event can never be more than \_\_\_\_\_ or less than \_\_\_\_\_.
3. Write the multiplication rule on the line below.

a)  $P(A \cap B) =$  \_\_\_\_\_

b) In order to use the multiplication rule, event A and event B must be \_\_\_\_\_.

4. Write the formula for compound probability.

$$P(A \cup B) =$$

#5-9. Tribute Flags sells American Flags. The number of flags sold in any given day is normally distributed with a mean of 400 and a standard deviation of 15.

5. Find the probability that the store sells fewer than 387 flags on any single day?
6. The sales vice president of Tribute Flags gets a bonus if more than 425 flags are sold. What is the probability that the store manager will earn the bonus on any single day?
7. Find the probability Tribute Flags sells an average of 405 or more flags in a 10-day period.
8. Find the proportion of days that Tribute Flags sells between 380 and 410 flags on any single day?
9. The sales manager of Tribute Flags will be fired if mean sales are less than 396 flags in the next 30-day month. What is the probability that the manager is fired at the end of the next month?

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10. Calculate the expected value of Facebook stock given the following discrete random variables and outcomes.

$x$  = state of the economy measured in two classes - "recession" or "boom"

$y$  = another social media site surfaces as competition - "competition" or "no competition"

Both of these variables are independent.

$x$	Recession	Boom
$P(x)$	.2	.8

10a. Find  $P(Boom \cap Competition) =$  \_\_\_\_\_

10b. Find  $P(Boom \cap No.Competition) =$  \_\_\_\_\_

$y$	Competition	No Competition
$P(y)$	.75	.25

10c. Find  $P(Recession \cap Competition) =$  \_\_\_\_\_

10d. Find  $P(Recession \cap No.Competition) =$  \_\_\_\_\_

- 10e. In calculating Facebook's expected value, consider the following outcomes:

If there is a boom and competition surfaces, Facebook will be worth \$35/share.

If there is a boom and no competition surfaces, Facebook will be worth \$60/share

If there is a recession and competition surfaces, Facebook will be worth \$10/share

If there is a recession and no competition surfaces, Facebook will be worth \$45/share

Facebook Expected Value = \$ \_\_\_\_\_/share

1. Write the multiplication rule on the line below.

a)  $P(A \cap B) =$  \_\_\_\_\_

b) In order to use the multiplication rule, event A and event B must be \_\_\_\_\_.

2. Write the formula for compound probability.

$P(A \cup B) =$  \_\_\_\_\_

3. What is the term used to describe all of the outcomes possible? **S** \_\_\_\_\_ **S** \_\_\_\_\_.

4. The probability of any event can never be more than \_\_\_\_ or less than \_\_\_\_.

#5-9. Tribute Flags sells American Flags. The number of flags sold in any given day is normally distributed with a mean of 200 and a standard deviation of 25.

5. Find the probability that the store sells fewer than 206 flags on any single day?

6. The sales vice president of Tribute Flags gets a bonus if more than 220 flags are sold. What is the probability that the store manager will earn the bonus on any single day?

7. Find the probability Tribute Flags sells an average of 203 or more flags in a 6-day work week.

8. Find the proportion of days that Tribute Flags sells between 180 and 215 Flags in a single day?

9. The sales manager of Tribute Flags will be fired if mean sales are less than 195 flags in the next 30-day month. What is the probability that the manager is fired at the end of the next month?

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10. Calculate the expected value of Facebook stock given the following discrete random variables and outcomes.

$x$  = state of the economy measured in two classes - "recession" or "boom"

$y$  = another social media site surfaces as competition - "competition" or "no competition"

Both of these variables are independent.

$x$	Recession	Boom
$P(x)$	.1	.9

10a. Find  $P(Boom \cap Competition) =$  \_\_\_\_\_

10b. Find  $P(Boom \cap No.Competition) =$  \_\_\_\_\_

$y$	Competition	No Competition
$P(y)$	.45	.55

10c. Find  $P(Recession \cap Competition) =$  \_\_\_\_\_

10d. Find  $P(Recession \cap No.Competition) =$  \_\_\_\_\_

10e. In calculating Facebook's expected value, consider the following outcomes:

If there is a boom and competition surfaces, Facebook will be worth \$30/share.

If there is a boom and no competition surfaces, Facebook will be worth \$55/share

If there is a recession and competition surfaces, Facebook will be worth \$10/share

If there is a recession and no competition surfaces, Facebook will be worth \$45/share

Facebook Expected Value \$ \_\_\_\_\_/share

1. Write the multiplication rule on the line below.

a)  $P(A \cap B) =$  \_\_\_\_\_

b) In order to use the multiplication rule, event A and event B must be \_\_\_\_\_.

2. Write the formula for compound probability.

$P(A \cup B) =$  \_\_\_\_\_

3. What is the term used to describe all of the outcomes possible? **S** \_\_\_\_\_ **S** \_\_\_\_\_.

4. The probability of any event can never be more than \_\_\_\_ or less than \_\_\_\_.

#5-9. Tribute Flags sells American Flags. The number of flags sold in any given day is normally distributed with a mean of 300 and a standard deviation of 25.

5. Find the probability that the store sells fewer than 306 flags on any single day?

6. The sales vice president of Tribute Flags gets a bonus if more than 320 flags are sold. What is the probability that the store manager will earn the bonus on any single day?

7. Find the probability Tribute Flags sells an average of 303 or more flags in a 7-day work week.

8. Find the proportion of days that Tribute Flags sells between 280 and 318 flags in a single day?

9. The sales manager of Tribute Flags will be fired if mean sales are less than 295 flags in the next 30-day month. What is the probability that the manager is fired at the end of the next month?

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10. Calculate the expected value of Facebook stock given the following discrete random variables and outcomes.

$x$  = state of the economy measured in two classes - "recession" or "boom"

$y$  = another social media site surfaces as competition - "competition" or "no competition"

Both of these variables are independent.

	<b>Recession</b>	<b>Boom</b>
$x$ )	.15	.85

10a. Find  $P(Boom \cap Competition) =$  \_\_\_\_\_

10b. Find  $P(Boom \cap No.Competition) =$  \_\_\_\_\_

	<b>Competition</b>	<b>No Competition</b>
$y$ )	.4	.6

10c. Find  $P(Recession \cap Competition) =$  \_\_\_\_\_

10d. Find  $P(Recession \cap No.Competition) =$  \_\_\_\_\_

10e. In calculating Facebook's expected value, consider the following outcomes:

If there is a boom and competition surfaces, Facebook will be worth \$30/share.

If there is a boom and no competition surfaces, Facebook will be worth \$55/share

If there is a recession and competition surfaces, Facebook will be worth \$10/share

If there is a recession and no competition surfaces, Facebook will be worth \$45/share

Facebook Expected Value \$ \_\_\_\_\_/share

1. Write the multiplication rule on the line below.

a)  $P(A \cap B) =$  \_\_\_\_\_

b) In order to use the multiplication rule, event A and event B must be \_\_\_\_\_.

2. Write the formula for compound probability.

$P(A \cup B) =$  \_\_\_\_\_

3. What is the term used to describe all of the outcomes possible? **S** \_\_\_\_\_ **S** \_\_\_\_\_.

4. The probability of any event can never be more than \_\_\_\_ or less than \_\_\_\_.

5. The sum of the probabilities for all outcomes in a sample set is always \_\_\_\_.

6. TRUE or FALSE: Events are the possible results for any given outcome.

7. What probability symbol can be used in place of the word "and"? \_\_\_\_\_

8. What probability symbol can be used in place of the word "or"? \_\_\_\_\_

#9-14. Mega Clocks sells large clocks for industrial use throughout the world. The number of clocks sold in a given day is normally distributed with a mean of 200 and a standard deviation of 25.

9. Find the probability that the store sells fewer than 277 clocks on any single day?

10. The sales vice president of Mega Clocks gets a bonus if more than 235 clocks are sold. What is the probability that the store manager will earn the bonus on any single day?

11. Find the probability Mega Clocks sells an average of 198 or more clocks in a 7-day work week.

12. Find the proportion of days that Mega Store sells between 185 and 208 clocks on any single day?

13. The sales manager of Mega Clocks will be fired if mean sales are less than 197 clocks in the next 30-day month. What is the probability that the manager is fired at the end of the next month?

14. If you randomly select 100 days from Mega Clock's sales reports, what is the probability that the average sales for this period will fall between 199 and 202 clocks?

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15. Calculate the expected value of Facebook stock given the following discrete random variables and outcomes.

$x$  = state of the economy measured in two classes - "recession" or "boom"

$y$  = another social media site surfaces as competition - "competition" or "no competition"

Both of these variables are independent.

$x$	Recession	Boom
$P(x)$	.15	.85

15a. Find  $P(Boom \cap Competition) =$  \_\_\_\_\_

15b. Find  $P(Boom \cap No.Competition) =$  \_\_\_\_\_

$y$	Competition	No Competition
$P(y)$	.4	.6

15c. Find  $P(Recession \cap Competition) =$  \_\_\_\_\_

15d. Find  $P(Recession \cap No.Competition) =$  \_\_\_\_\_

15e. In calculating Facebook's expected value, consider the following outcomes:

If there is a boom and competition surfaces, Facebook will be worth \$20/share.

If there is a boom and no competition surfaces, Facebook will be worth \$80/share

If there is a recession and competition surfaces, Facebook will be worth \$10/share

If there is a recession and no competition surfaces, Facebook will be worth \$30/share

Facebook Expected Value \$ \_\_\_\_\_/share

