

Math 2 Spring Final Review

Name: _____ Per: _____

Unit 4: Quadratics

1. Multiply:

a. $(x - 4)(x - 9)$

b. $(2x + 3)(3x + 1)$

2. Factor completely:

a. $x^2 - 7x - 18$

b. $2x^2 + 16x$

c. $x^2 - 49$

3. Find the x-intercepts by factoring:

$x^2 - 11x + 30 = 0$

4. Find the x-intercepts by using the Quadratic Formula:

$0 = 2x^2 - 17x + 35$

5. Find the vertex for each of the following:

a. $y = x^2 - 8x + 7$

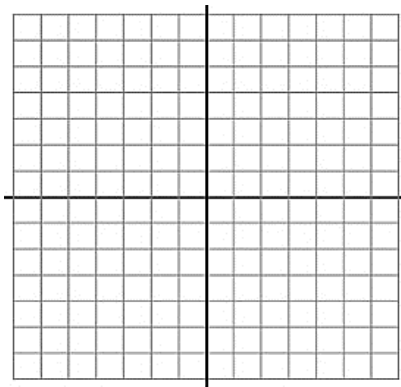
b. $y = (x - 11)(x + 3)$

6. A cannonball is shot through the air and can be modeled by the equation $h = -16t^2 + 125t + 20$, where h is the height of the cannonball after t seconds. When will the cannonball hit the ground? Round to the nearest hundredth of a second.

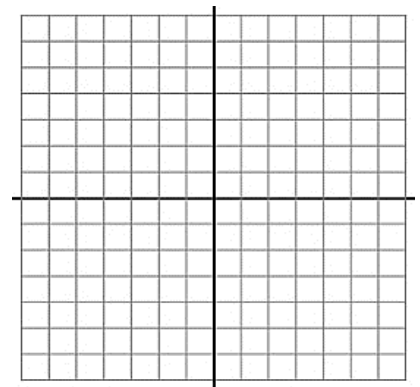
Unit 5: Systems of Equations

7. Solve each of the following systems by graphing.

a. $\begin{cases} y = x - 3 \\ y = -\frac{3}{2}x + 7 \end{cases}$



b. $\begin{cases} y = x^2 - 6 \\ y = -2x - 3 \end{cases}$



8. Solve each of the following systems of equations using the method of your choice:

a.
$$\begin{cases} 3x + 5y = -23 \\ 6x - y = 31 \end{cases}$$

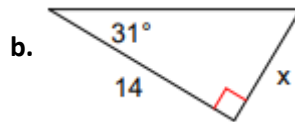
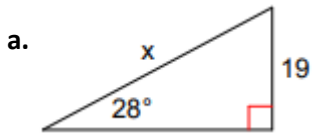
b.
$$\begin{cases} y = 4x + 11 \\ y = 4x - 8 \end{cases}$$

c.
$$\begin{cases} y = 3x + 5 \\ 4x - 5y = 8 \end{cases}$$

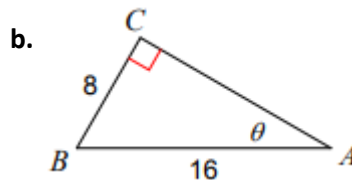
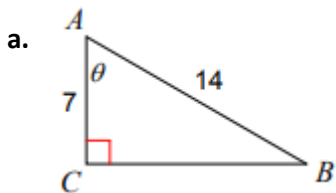
d.
$$\begin{cases} y = x^2 + 7x - 5 \\ y = 2x + 9 \end{cases}$$

Unit 6: Trigonometry

9. Find the missing side lengths for each of the following triangles:



10. Find the missing angle measures (θ) for each of the following triangles:



11. A 25-foot ladder is leaning against a 20ft wall. Find the angle of elevation from the base of the ladder to the top of the wall.

12. Convert the following radians to degrees:

a. $\frac{2\pi}{3}$

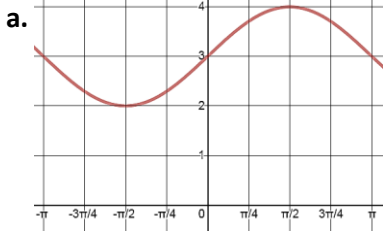
b. $\frac{3\pi}{5}$

13. Convert the following degrees to radians:

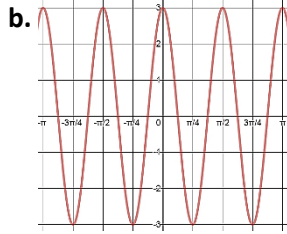
a. 540°

b. 30°

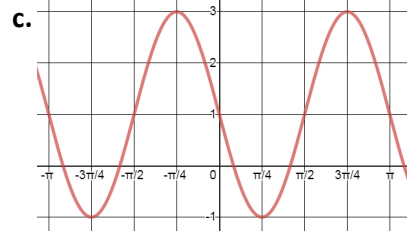
14. Identify each of the following functions as either sine or cosine.



Sine or Cosine

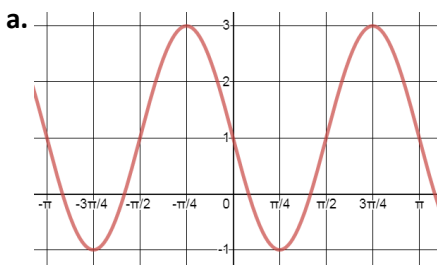


Sine or Cosine



Sine or Cosine

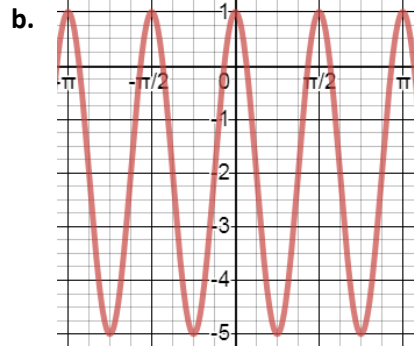
15. Identify the amplitude and vertical shift of each of the following functions:



Amplitude: _____

Period: _____

Vertical Shift: _____



Amplitude: _____

Period: _____

Vertical Shift: _____

Unit 7: Probability

16. A survey of 25 juniors asked whether or not they had been to Mexico and Canada. The results are in the table below.

	Have Been to Canada	Have Not Been to Canada	Total
Have Been to Mexico	6	3	9
Have Not Been to Mexico	5	11	16
Total	11	14	25

a. $P(\text{has been to Mexico})$

b. $P(\text{has been to Mexico and Canada})$

c. $P(\text{has been to Mexico or Canada})$

d. $P(\text{has been to Mexico} \mid \text{has not been to Canada})$

e. $P(\text{has been to Canada} \mid \text{has not been to Mexico})$

f. Is going to Mexico and going to Canada independent? Use math to explain your answer.

17. Determine whether each of the following scenarios are independent or dependent:

a. One tossed coin landing heads and the next landing tails.

Independent or Dependent

b. Rolling two sixes in a row on a number cube.

Independent or Dependent

c. Drawing a red tile from a bag and then drawing a green tile after replacing the first tile.

Independent or Dependent

d. Drawing a blue tile from a bag and then drawing a red tile without replacing the first.

Independent or Dependent

18. Determine whether the following outcomes are mutually exclusive:

a. Rolling a 6-sided die and getting both a 4 and an even number

Mutually Exclusive or Not Mutually Exclusive

b. Flipping two coins and landing on one heads and one tails

Mutually Exclusive or Not Mutually Exclusive

c. Drawing both a jack and a 7 from a deck of cards

Mutually Exclusive or Not Mutually Exclusive

d. Being born in the months of April and July

Mutually Exclusive or Not Mutually Exclusive