

Name: _____

1. What is the slope of a line that is parallel and perpendicular to the following equations?

a. $Y = -3x + 2$

i. Parallel

Perpendicular

b. $Y = 5x - 3$

i. Parallel

Perpendicular

c. $Y = \frac{2}{3}x + 5$

i. Parallel

Perpendicular

d. $Y = -\frac{4}{5}x - 8$

i. Parallel

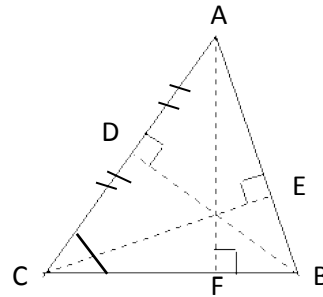
Perpendicular

2. Name the following parts of a triangle.

a. Median: _____

b. Altitude: _____

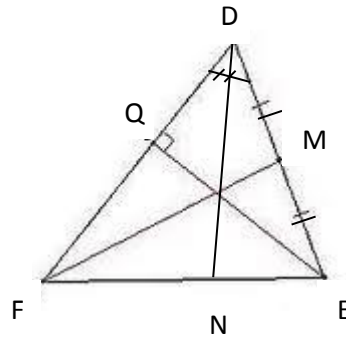
c. Angle Bisector: _____



a. Median: _____

b. Altitude: _____

c. Angle Bisector: _____



3. Factor and find the values for x.

a. $x^2 + 8x + 16 = 0$

i. $X = 4$ and $x = -4$

ii. $X = 4$

iii. $X = -4$

iv. Does not factor

b. $X^2 + 6x = 16$

i. $X = 4$ and $x = -4$

ii. $X = 8$ and $x = -2$

iii. $X = -8$ and $x = 2$

iv. Does not factor

4. The cost of a 5-bedroom house in Miami is \$4,500,462. If they split the cost evenly, how much would it cost each couple, if there were
- 3 couples
 - 5 couples
 - 4 couples

5. From the data given, write an equation of the line.

X	1	3	5	7	9
Y	2	10	18	26	34

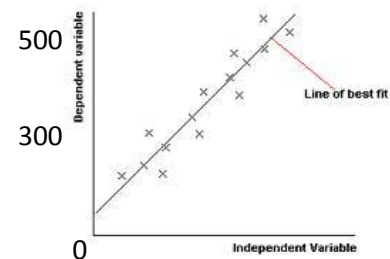
- $y = 2x + 4$
- $y = 4x - 2$
- $y = 4x + 2$
- $y = -2x + 4$

X	2	3	4	5
Y	3	6	9	12

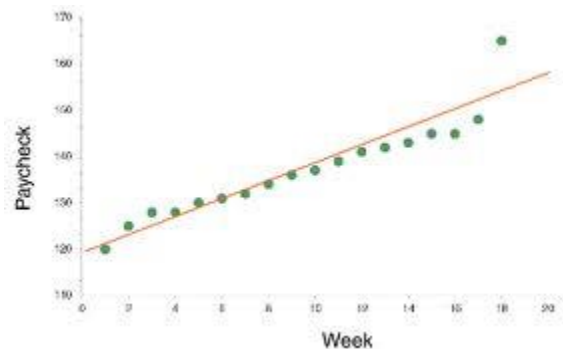
- $y = 2x + 1$
- $y = x^2 + 1$
- $y = 3x - 3$
- $y = -3x + 3$

6. The graph shows a line of best fit for the data collected. What is the equation of the line of best fit?

- $Y = 4x + 400$
- $Y = -4x - 400$
- $Y = 4x + 100$
- $Y = -4x - 100$



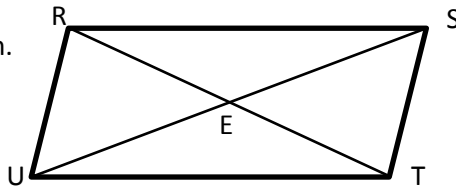
- $Y = x$
- $Y = x + 120$
- $Y = -x + 120$
- $Y = -x$



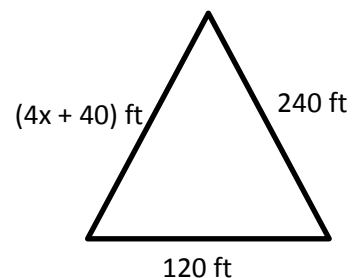
7. A survey was taken at Ringgold High School to see how many smart phones are used by students. In the sample, 8 out of 16 used smartphones. If there are 600 students, how many should we expect to use smartphones?
8. A survey was taken at Ringgold High School to see how many students study for a math test. In the sample, 10 out of 35 students studied. If there are 600 students, how many should we expect to use smartphones?
9. Simplify:
- $(9x - 6) - (-5x + 7)$
 - $14x - 13$
 - $4x + 1$
 - $-4x + 13$
 - $-4x - 13$
 - $(-7x^2y + xy + 3x + 2) - (5x^2y - 5xy - 6x - 7)$
 - $-2x^2y - 4xy - 2x - 5$
 - $-12x^2y + 6xy + 9x + 9$
 - $-12x^2y - 6xy - 9x - 9$
 - $12x^2y + 6xy + 9x + 9$
10. What is the value of the following expression?
- $|-15| + |-2|$

b. $|-2| - |5|$

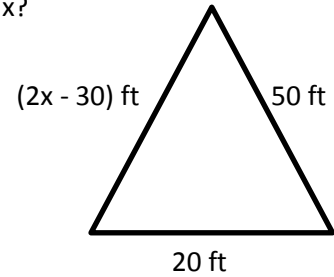
11. Parallelogram RSTU is given.



- The length of RT is 60 meters. The length of SU is 20. What is the length of SE?
 - The length of RT is 90 meters. The length of SU is 85 meters. What is the length of RE?
12. If the perimeter of the triangle is 500, what is the value of x ?



13. If the perimeter of the triangle is 100, what is the value of x ?



14. Simplify:

a. $\frac{14x^4y^7}{6x^5y^4}$

b. $\frac{(3x^2y^2)^3}{(2x^4y)^2}$

15. Find the mean, median, and mode for the following sets of data.

a. 5, 5, 6, 9, 4, 3, 4, 8, 10, 4

i. Mean: _____

ii. Median: _____

iii. Mode: _____

b. 28, 35, 50, 56, 88, 63, 35, 72, 84, 88

i. Mean: _____

ii. Median: _____

iii. Mode: _____

16. Factor:

a. $4x^2 - 9$

i. $(2x + 3)(2x - 3)$

ii. $(x + 3)(x - 3)$

iii. $(2x + 3)(2x + 3)$

iv. $(2x - 3)(2x - 3)$

b. $9x^2 - 1$

i. $(3x + 1)(3x + 1)$

ii. $(9x + 1)(x - 1)$

iii. $(3x + 1)(3x - 1)$

iv. $(3x - 1)(3x - 1)$

17. Simplify the negative exponent.

a. $(4)^{-2}$

i. -16

ii. 16

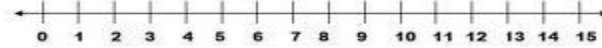
iii. $\frac{1}{16}$

iv. $\frac{-1}{16}$

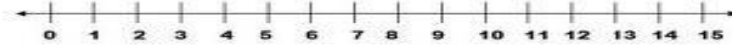
- b. $(2)^{-3}$
- i. -6
 - ii. -8
 - iii. $\frac{1}{-6}$
 - iv. $\frac{1}{8}$

18. Graph the following square root on the given number line.

a. $\sqrt{45}$



b. $\sqrt{120}$



19. The depth of water in a tank is 120 ft. What is the depth of water in a tank at the end of three months, if each month the water drops by the percent given below.

a. 30%

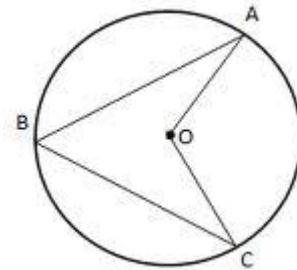
b. 50%

20. Find the measure of angle ABC. Given the following information

a. Measure of arc AC is 90 degrees.

b. Measure of arc AC is 160 degrees.

c. Measure of arc AC is 50 degrees.



21. Solve for x.

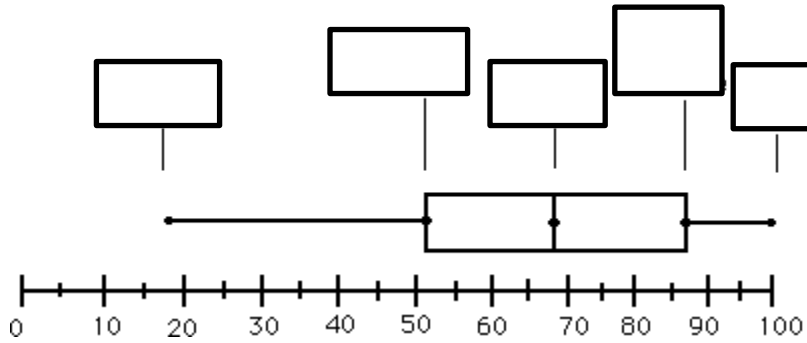
a. $4x + 3 = 9x - 2$

b. $24x + 2 = -6x - 58$

22.

23. Define the following terms used to label Box-and-Whisker Plots. Then label on the plot given.

- a. Lower quartile: _____
- b. Median: _____
- c. Upper quartile: _____
- d. Lower Extreme: _____
- e. Upper Extreme: _____

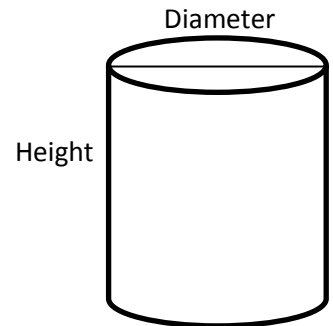


24. Which set of points is a solution of the given equations?

- a. $y = x$ and $y = (-2/3)x + 5$
 - i. (3,3)
 - ii. (-3, -3)
 - iii. (2,2)
 - iv. (-2,-2)
- b. $x = 2y - 8$ and $4x + y = 13$
 - i. (2, -5)
 - ii. (-2,5)
 - iii. (2,5)
 - iv. (-2, -5)

25. A cylinder is shown to the right. What is the volume of the cylinder?

- a. The cylinder has Height of 18 and Diameter 28.
 - i. 2536π
 - ii. 3528π
 - iii. 3628π
 - iv. 924π
- b. The cylinder has Height of 6 and Diameter 36.
 - i. 1944π
 - ii. 648π
 - iii. 1807π
 - iv. 2204π



26. What is the solution set for:

- a. $5 < 2 + 3y < 14$
 - i. $-4 > y > -1$
 - ii. $-4 < y < -1$
 - iii. $1 > y > 4$
 - iv. $1 < y < 4$
- b. $5 < 2 - 3y < 14$
 - i. $-4 > y > -1$
 - ii. $-4 < y < -1$
 - iii. $1 > y > 4$
 - iv. $1 < y < 4$

27. What is the equation of the line that contains the following points?

- a. (0,1) and (1, -2)
 - i. $y = -3x$
 - ii. $y = 3x$
 - iii. $y = -3x + 1$
 - iv. $y = 3x + 1$
- b. (1,-1) and (2, -6)
 - i. $y = 4x$
 - ii. $y = -4x$
 - iii. $y = 4x + 3$
 - iv. $y = -4x + 3$

28. Multiply the following:

- a. $-2a^3b(4a^4b^2 + 3ab^4)$
 - i. $-8a^7b^3 + 3ab^4$
 - ii. $-8a^7b^3 - 6a^4b^5$
 - iii. $-8a^7b^3 - 6a^4b^5$
 - iv. $-2a^7b^3 - 2a^4b^5$
- b. $-2x^3(x^3 + 5x^2 - 3x + 7)$
 - i. $2x^9 + 10x^6 - 6x^3 + 14x^3$
 - ii. $-2x^6 - 10x^5 + 6x^4 - 14x^3$
 - iii. $2x^6 - 10x^5 + 6x^4 + 14x^3$
 - iv. $-2x^9 - 10x^6 + 6x^3 - 14x^3$

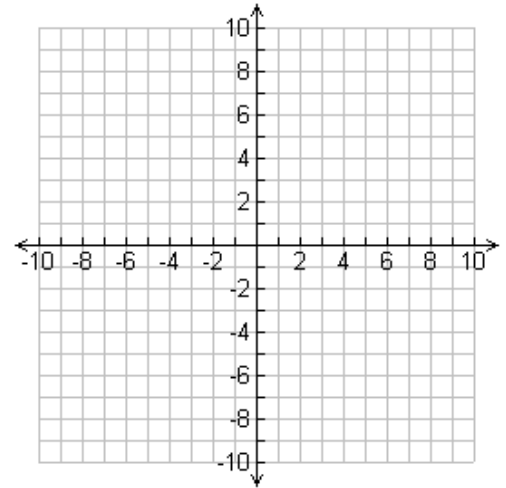
29. The total cost of taking a taxi from downtown Pittsburgh to Monongahela is \$50. The taxi charges a flat fee of \$15, plus \$3.25 per mile. Using the given equation $50 = 3.25m + 15$, about how many miles did was the taxi ride?

- a. 15
- b. 11
- c. 16
- d. 9

30. The total cost of taking a taxi from Monongahela to downtown Pittsburgh is \$50. The taxi charges a flat fee of \$10, plus \$4.00 per mile. Using the given equation $50 = 4.00m + 10$, about how many miles did was the taxi ride?
- 15
 - 12.5
 - 4
 - 10
31. The price of a new TV after a 15% discount is \$1059.95. What was the original price?
- \$155.88
 - \$883.32
 - \$1299.00
 - \$1247.00
32. The price of a new couch after a 25% discount is \$2301.75. What was the original price?
- \$575.44
 - \$1726.31
 - \$2887.19
 - \$3069.00
33. If the radius of a circle is quadrupled, what change is made to the circumference?
- Increased by 4
 - Multiplied by 4
 - Increased by 6
 - Multiplied by 6
34. If the radius of a circle is tripled, what change is made to the circumference?
- Increased by 2
 - Multiplied by 3
 - Increased by 3
 - Multiplied by 2

35. Part A: Graph: $y > \frac{4}{9}x + 0$ and explain your steps!

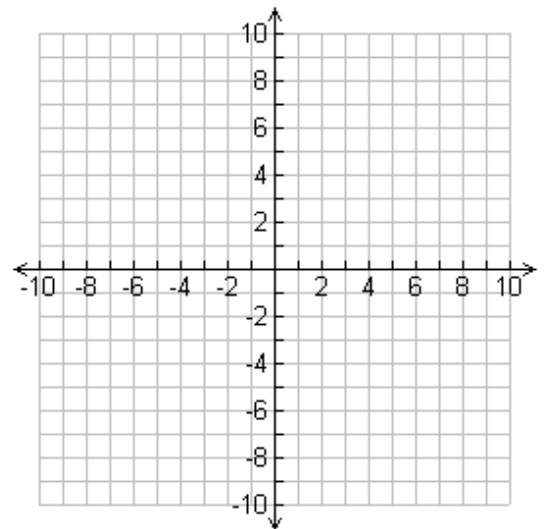
b. Explain how you could use the graph from part A to determine if the point $(2, -1)$ is a solution to the graph.



c. Determine, using algebra, if the point $(-6, 6)$ is a solution to the graph.

36. Part A: Graph: $10x + 8y < 80$ and explain your steps!

b. Explain how you could use the graph from part A to determine if the point $(-6, 6)$ is a solution to the graph.



c. Determine, using algebra, if the point $(6, 6)$ is a solution to the graph.