**Foundations in College Math Summer Work** **Name** _____

**This is a review of topics you should have covered in your algebra classes. Try each problem on your own. If you are confused, try to look up online how to solve a problem like these. Do your best.**

1. Write an expression representing five less than the product of three and a number.

2. It is $50 to join a club and then $15 per month. Write an expression to represent the monthly fee.

3. Simplify the expression: $^{-}4(5a + 7) + 7$

4. Simplify the expression: $^{-}2x + 4(x + 1) - 10$

5. If $f(x) = x^2 + 6$, find $f(^{-}2)$

6. Let $x = ^{-}2$, $y = 4$, and $z = ^{-}5$. Evaluate:

$$\frac{x^2 - z}{y}$$

7. Find three consecutive integers whose sum is 198.

8. Solve for x.
$3(x + 5) = 30$

9. Solve for x.
$^{-}2x + 12 \geq 20$

10. Solve for x.

$3(4x - 2) = 6(2x - 1)$

11. Solve for x.

$\frac{x}{2} - 6 < 10$

12. $3 + 5n = 4(n + 2) + 6n$. Solve for n.

13. $3|2n - 14| = 18$. Solve for n.

(There will be 2 answers.)

14. $-4x + y = 5$. Solve for y in terms of x.

15. Find the sales tax of an item that costs $42 and has a 8.25% sales tax. Round appropriately.

16. Pam has 36 tapes in her collection. This is $\frac{2}{3}$ as many as Bill has. Write an algebraic equation for this situation.

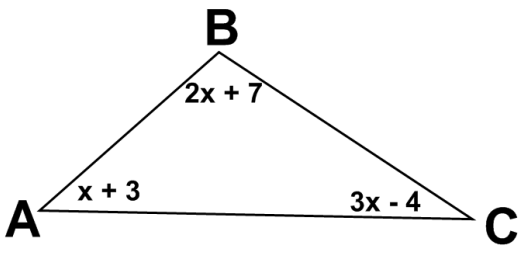
a) $\frac{2}{3} = 36x$

b) $\frac{3}{2} = 36x$

c) $36 = \frac{3}{2}x$

d) $36 = \frac{2}{3}x$

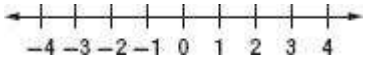
17. Find the value of x in the given figure:



18. 26 is what % of 104?

19. Solve the inequality and graph its solution

$^{-}4x + 7 \geq 15$




20. The highest score that is a record for a particular video game is 19,749 points. The lowest score on record for that same video game is 176 points. Which of the following inequalities best shows the range of scores recorded on the game?

a) $x \leq 19{,}749$

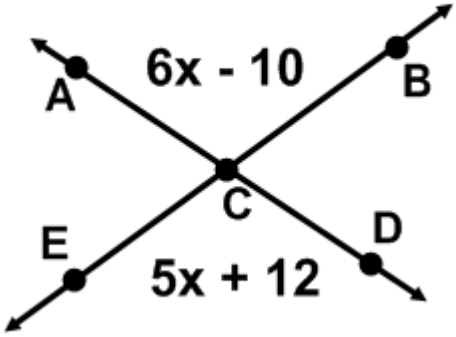
b) $x \geq 176$

c) $176 < x < 19{,}749$

d) $176 \leq x \leq 19{,}749$

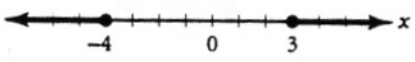
21. Solve for a: $\dfrac{5}{a-3} = \dfrac{4}{a+6}$

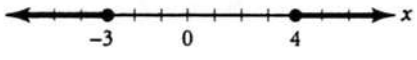
22. Write the equation to find x.

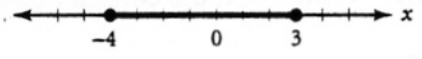


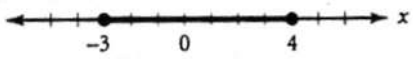

**23. Which of the following is the graph of the solution set of the compound inequality**

**$3x + 6 \geq {}^{-}3$ and $7 + 2x \leq 15$?**

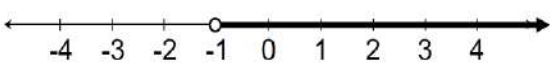
a) 

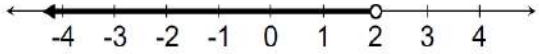

b) 

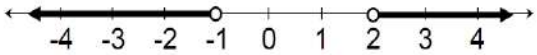

c) 

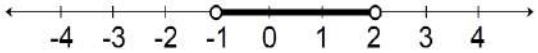

d) 

24. Which graph below represents this inequality? $x < -1$ or $x > 2$

a) 

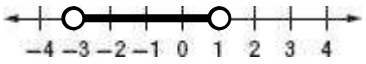

b) 

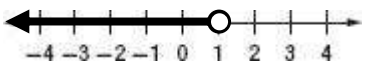

c) 

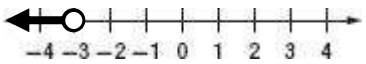

d) 

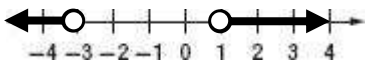

**25. Choose the correct graph:**

$x > -3$ and $x \leq 1$

a) 

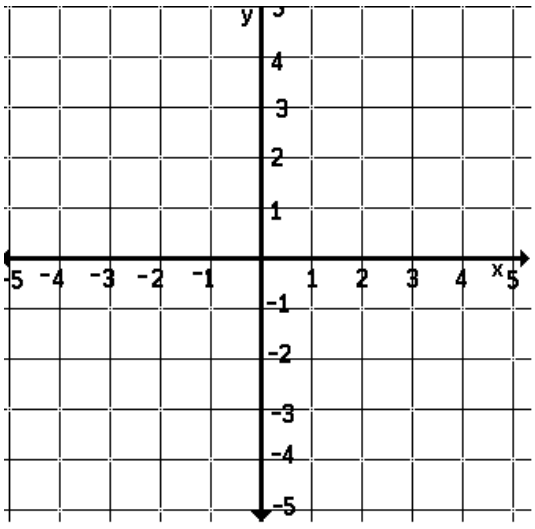

b) 


c) 

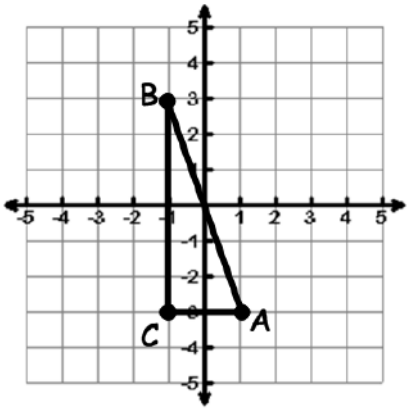

d) 


26. The ages of three brothers are consecutive integers with the sum of 84. How old are the brothers?

27. Graph the line $y = \frac{2}{3}x - 2$



28. Find the slope of the hypotenuse, $\overline{AB}$:




29. Find the slope of the line passing through the points (8 , 4) and (9 , -2)

30. What is the slope of a vertical line?

What is the slope of a horizontal line?

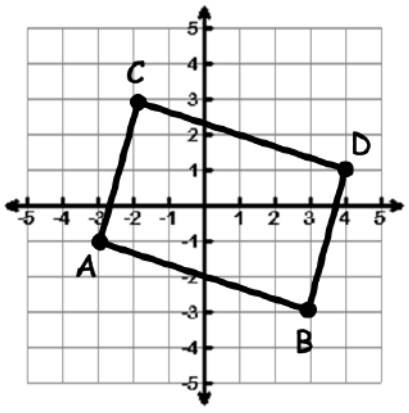
31. What is the y-intercept of the line $3x - 2y = -18$

32. If a DVD is discounted from $20 down to $15, what is the percent of discount?

33. Find the slope of the line through $(6, -2)$ and $(6, -4)$

34. What is the slope of the line perpendicular to: $y = 2x - 1$?

35. Parallelogram ABCD is shown in the box to the right. What is the slope of the line that goes through points A and B ?



36. Write the equation of the line with slope 5 and y-intercept 9

37. If Mr. Harty pays 6% sales tax on a $20 shirt, what is the final price?

38. Solve

$$\frac{(x+3)}{5} = \frac{x}{4}$$

39. Write the equation of the line that passes through (2, 4) and has a slope of ⁻2.

40. Which of the following lines would be parallel to y = ⁻4x + 5.

a) y = 1/4x + 2

b) y = ⁻4x – 2

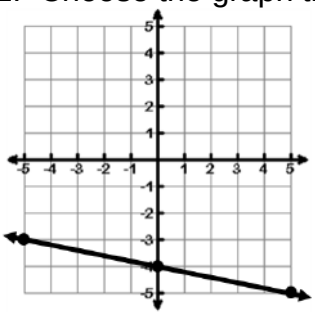
c) $y = -\frac{1}{4}x + 5.5$

d) $y = 4x + 6.5$

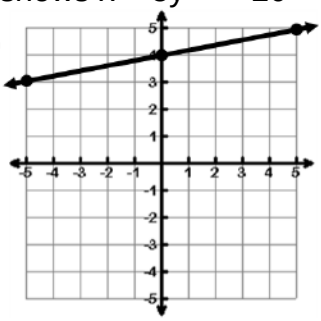
41. Write the equation of the line that has a slope of ⁻3 and it passes through the point (⁻1, 2).

42. Choose the graph that shows x + 5y = ⁻20

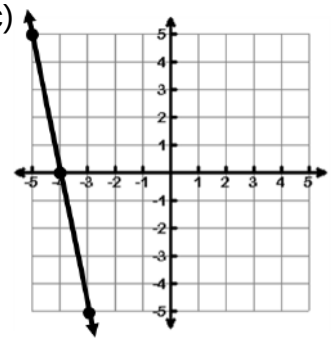
a)



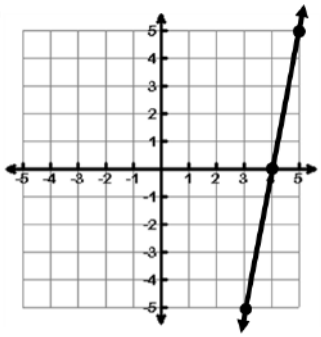
b)



c)



d)

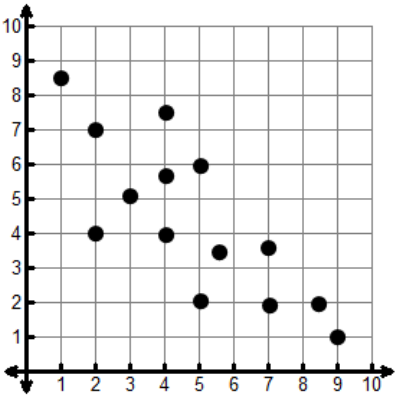


**43. Describe the correlation.**

a) positive

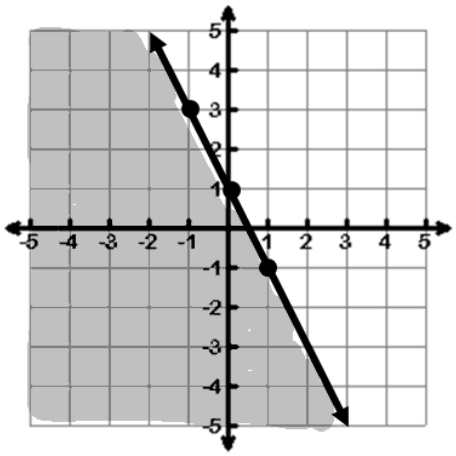
b) negative

c) none

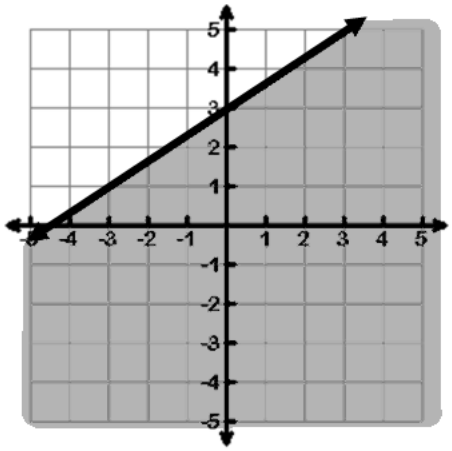


44. Which graph below represents $y \leq -2x + 1$?

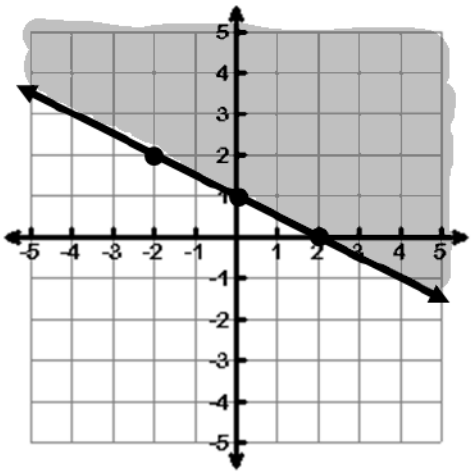
a)



b)



c)



d)