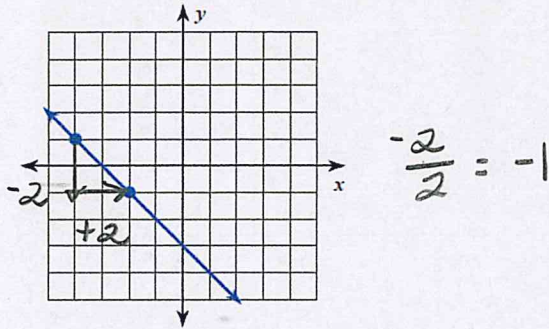


17. Solve each of the equations.

a.  $5(x+4) - 8 = x + 32$   
 $5x + 20 - 8 = x + 32$   
 $5x + 12 = x + 32$   
 $4x = 20$   
 $x = 5$

b.  $-3(x-6) - 5 = 175$   
 $-3x + 18 - 5 = 175$   
 $-3x + 13 = 175$   
 $-3x = 162$   $x = -54$

18. Find the slope using the graph.  $m = \frac{\text{rise}}{\text{run}}$



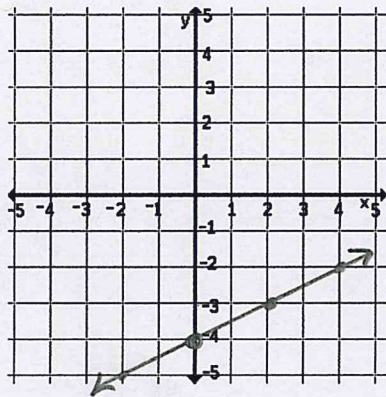
19. Find the slope using two points.  $m = \frac{y_2 - y_1}{x_2 - x_1}$

$(-2, 6)$  and  $(6, 8)$   
 $x_1, y_1$   $x_2, y_2$

$$\frac{8-6}{6-(-2)} = \frac{2}{6+2} = \frac{2}{8} = \frac{1}{4}$$

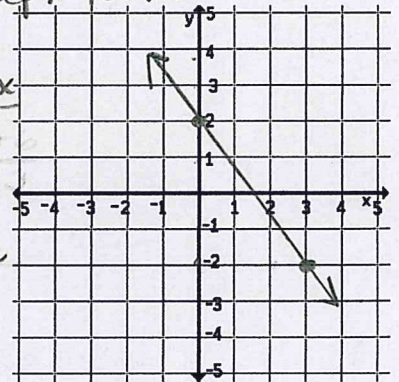
Graph each equation.

20.  $y = \frac{1}{2}x - 4$   
 slope =  $\frac{\text{rise}}{\text{run}}$   
 starting point



Rewrite in slope-intercept form

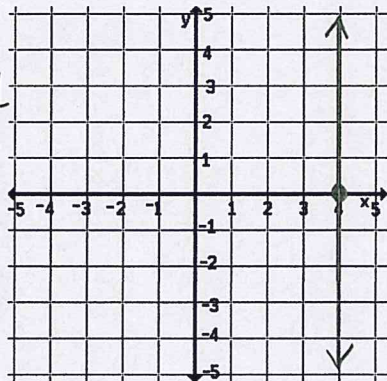
21.  $4x + 3y = 6$   
 $-4x \quad -4x$   
 $\frac{3y}{3} = \frac{-4x + 6}{3}$   
 $y = -\frac{4}{3}x + 2$



22.  $x = 4$

Slope = undefined

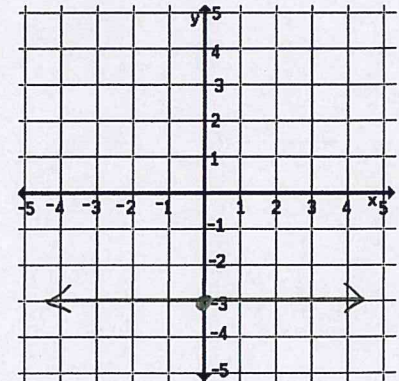
Vertical line  
 "VUX"



23.  $y = -3$

Slope = 0

Horizontal line  
 "HOY"





Write the slope-intercept form of each equation given a point and slope or two points. Use point-slope form:

$y - y_1 = m(x - x_1)$  first. Then, rewrite the equation in slope-intercept form:  $y = mx + b$ .

24.  $(4, -6), m = 2$

$$y - (-6) = 2(x - 4)$$

$$y + 6 = 2x - 8$$

$$y = 2x - 14$$

25.  $(-9, 6), m = \frac{1}{3}$

$$y - 6 = \frac{1}{3}(x - (-9))$$

$$y - 6 = \frac{1}{3}(x + 9)$$

$$y - 6 = \frac{1}{3}x + 3$$

$$y = \frac{1}{3}x + 9$$

Find the slope first!  $m = \frac{y_2 - y_1}{x_2 - x_1}$

26.  $(2, -5)$  and  $(7, 0)$

$$m = \frac{0 - (-5)}{7 - 2} = \frac{5}{5} = 1$$

$$y - (-5) = 1(x - 2)$$

$$y + 5 = x - 2$$

$$y = x - 7$$

27.  $(4, -3)$  and  $(6, -7)$

$$m = \frac{-7 - (-3)}{6 - 4} = \frac{-7 + 3}{2} = \frac{-4}{2} = -2$$

$$y - (-3) = -2(x - 4)$$

$$y + 3 = -2x + 8$$

$$y = -2x + 5$$

Solve each literal equation.

28. Solve  $C = \frac{2\pi r}{2\pi}$  for  $r$ . *Get "r" alone.*

$$\frac{C}{2\pi} = r$$

29. Solve  $A = \frac{1}{2}(b_1 + b_2)h$  for  $h$ .

$$2A = (b_1 + b_2)h$$

$$\frac{2A}{b_1 + b_2} = h$$

30. Solve  $\frac{A}{2} = \frac{2(L + W)}{2}$  for  $L$ .

$$\frac{A}{2} = L + W$$

$$\frac{A}{2} - W = L \text{ or } \frac{A - 2W}{2} = L$$

31. Solve  $\frac{K}{x} = \frac{xr^2}{x}$  for  $r$ .

$$\frac{K}{x} = r^2$$

$$\sqrt{\frac{K}{x}} = r$$

Write each equation in standard form.  $Ax + By = C$

32.  $y = -\frac{1}{4}x + 3$

$$\left[\frac{1}{4}x + y = 3\right] \times 4$$

$$x + 4y = 12$$

33.  $y = 2x - 7$

$$-2x + y = -7$$

or

$$2x - y = 7$$

Write each equation in slope-intercept form.  $y = mx + b$

34.  $5x + 2y = -6$

$$\frac{2y}{2} = \frac{-5x}{2} - \frac{6}{2}$$

$$y = -\frac{5}{2}x - 3$$

35.  $2x + 3y = 9$

$$\frac{3y}{3} = \frac{-2x}{3} + \frac{9}{3}$$

$$y = -\frac{2}{3}x + 3$$



36. What is the y-intercept for the equation  $7x + 2y = -14$ ?

$$x=0 \quad 7(0) + 2y = -14$$

$$2y = -14$$

$$y = -7 \quad (0, -7)$$

37. What is the x-intercept for the equation  $-3x - 5y = -15$ ?

$$y=0 \quad -3x - 5(0) = -15$$

$$-3x = -15$$

$$x = 5 \quad (5, 0)$$

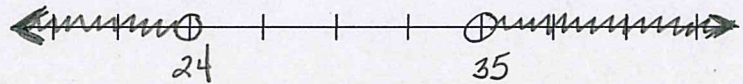
38. Rewrite each function using the Distributive Property.

a.  $d(x) = 6(x + 4) = \underline{6x + 24}$

b.  $d(x) = 2(5x + 3.5) = \underline{10x + 7}$

39. Write a compound inequality that represents a number that is less than 24 or greater than 35. Then, graph the compound inequality on the number line. "x" < >

$$x < 24 \text{ or } x > 35$$



40. Solve each inequality and graph the solution on the number line.

a.  $4(x+1) \leq 12$

$$4x + 4 \leq 12$$

$$4x \leq 8$$

$$x \leq 2$$

b.  $-3(x-3) < 12$

$$-3x + 9 < 12$$

$$-3x < 3$$

$$x > -1$$

Flip the sign when you x or ÷ by a negative #.

c.  $\frac{90}{15} \leq \frac{15m}{15} \leq \frac{135}{15}$

$$6 \leq m \leq 9$$

d.  $\frac{65}{-13} \leq \frac{-13x}{-13} < \frac{104}{-13}$

$$-5 \geq x > -8$$

or

$$-8 < x \leq -5$$

41. Solve and graph each compound inequality on the number line.

a.  $-6 \leq 2x + 2 \leq 10$

$$\frac{-2}{2} \quad \frac{-2}{2} \quad \frac{-2}{2}$$

$$\frac{-8}{2} \leq \frac{2x}{2} \leq \frac{8}{2}$$

$$-4 \leq x \leq 4$$

b.  $x + 2 \leq -4$  or  $-2x < -8$

$$x \leq -6$$

$$x > 4$$

Flip the sign!

c.  $4x - 4 < -24$  or  $4x + 6 > 14$

$$4x < -20$$

$$4x > 8$$

$$x < -5$$

$$x > 2$$

42. Joey has \$50 and earns \$12.50 per day. He wants to save at least \$250.00. Write an inequality that represents this scenario. Do Not Solve! *starting point*  $12.50x + 50 \geq 250$

43. Evaluate each absolute value expression.

a.  $|4 - 12|$

b.  $|-8(7)|$

c.  $|-13| - |6 - 10|$

d.  $\left| \frac{-15 + 13}{5} \right|$  \*Write your answer as a fraction!

44. Solve each absolute value equation. Remember, get the absolute value sign by itself (as if it were a variable). Then, set what is inside the absolute value sign equal to the positive and negative values of the number on the other side of the equals sign.

a.  $|2x - 5| = 7$

b.  $|-2x + 7| = 11$

c.  $|x - 6| + 8 = 41$

d.  $52 = 7|x - 2| - 4$

45. Consider the sequence shown.

a. Describe the pattern.



b. Draw the next two figures of the pattern.

c. Write a numeric sequence to represent the first 5 figures.

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

46. Consider the sequence shown.

a. Describe the pattern.



b. Draw the next two figures of the pattern.

c. Write a numeric sequence to represent the first 5 figures.

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_