

Score: _____

NAME: Key**Algebra 1 Semester 1****Assessment Training Practice #3B**

- 1.) Find the x-intercept and the y-intercept of the graph of the equation: $3x - 4y = 24$. Graph the equation.

x -intercept: let $y = 0$

$$3x - 4(0) = 24$$

$$\frac{3x}{3} = \frac{24}{3}$$

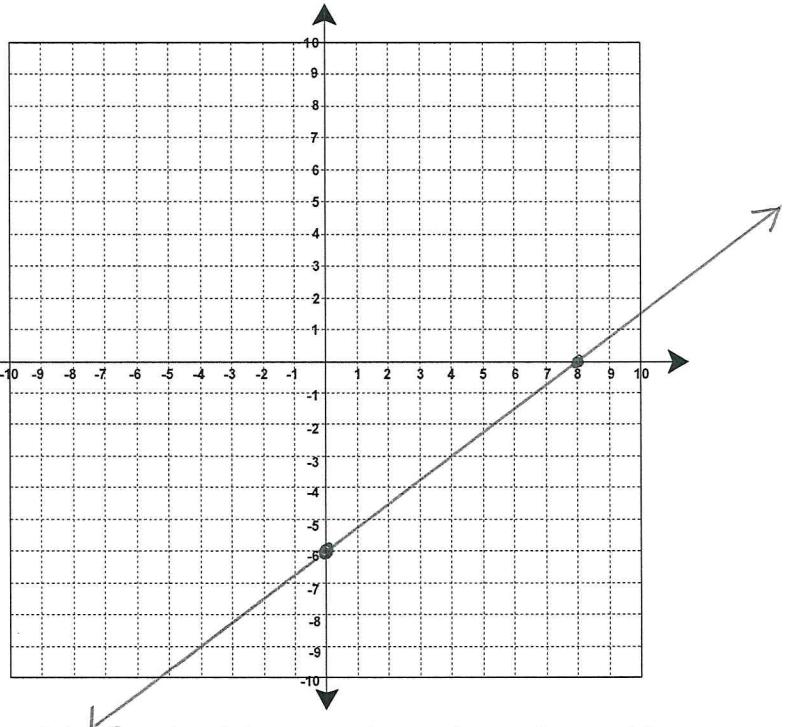
$$x = 8$$

y -intercept: let $x = 0$

$$3 \cdot 0 - 4y = 24$$

$$\frac{-4y}{-4} = \frac{24}{-4}$$

$$y = -6$$



- 2.) Find the x-intercept and the y-intercept of the graph of the equation: $-4x + 3y = 12$.

Graph the equation.

x -intercept: let $y = 0$

$$-4x + 3(0) = 12$$

$$\frac{-4x}{-4} = \frac{12}{-4}$$

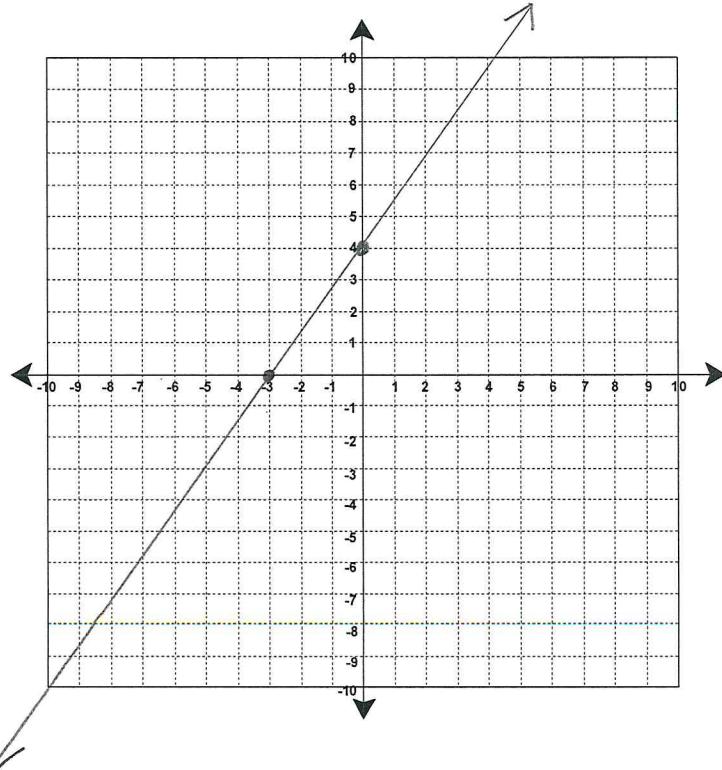
$$x = -3$$

y -intercept: let $x = 0$

$$-4(0) + 3y = 12$$

$$\frac{3y}{3} = \frac{12}{3}$$

$$y = 4$$



- 3.) A line passes through the points $(-5, -2)$ and $(3, 6)$. Write an equation for the line. Graph the equation.

$$(-5, -2) \quad (3, 6)$$

$$x_1 \quad y_1 \quad x_2 \quad y_2$$

$$m = \frac{6 - -2}{3 - -5}$$

$$m = \frac{8}{8}$$

$$m = 1$$

$$y = mx + b$$

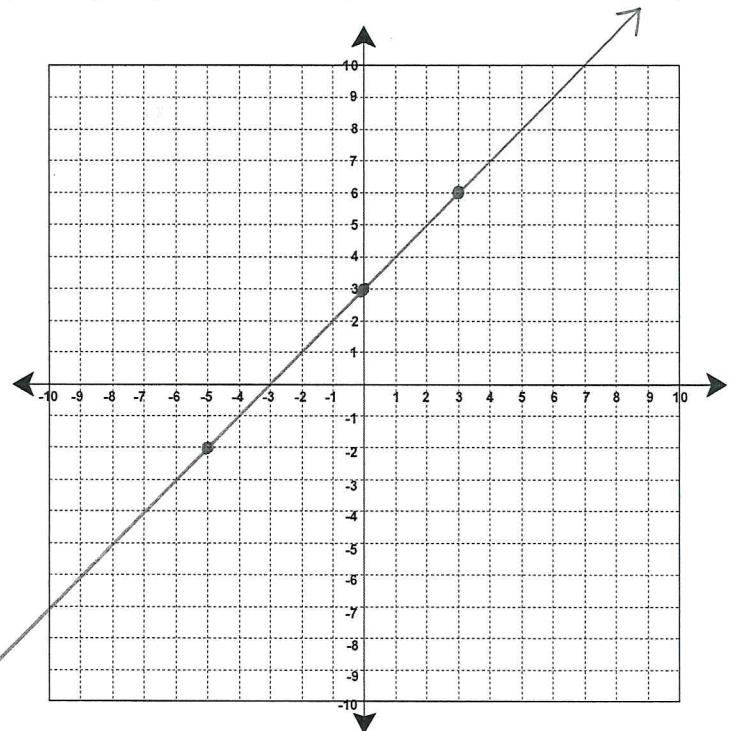
$$6 = 1 \cdot 3 + b$$

$$6 = 3 + b$$

$$-3 \quad -3$$

$$3 = b$$

$$y = x + 3$$



- 4.) A line passes through the points $(-3, 5)$ and $(2, -10)$. Write an equation for the line. Graph the equation.

$$(-3, 5) \quad (2, -10)$$

$$x_1 \quad y_1 \quad x_2 \quad y_2$$

$$m = \frac{-10 - 5}{2 - -3}$$

$$m = \frac{-15}{5} \quad y = mx + b$$

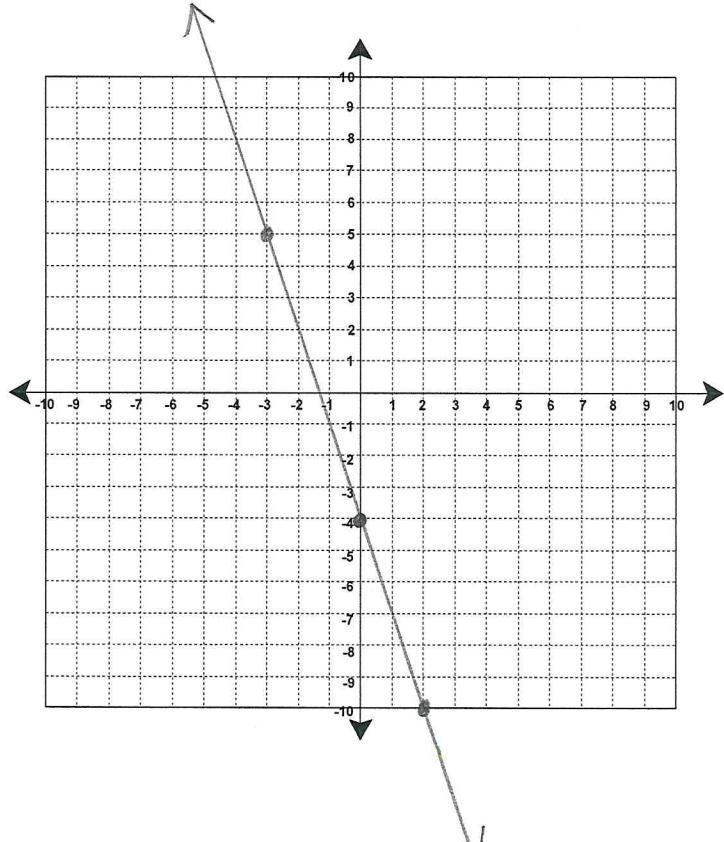
$$m = -3 \quad -10 = -3 \cdot 2 + b$$

$$-10 = -6 + b$$

$$+6 \quad +6$$

$$-4 = b$$

$$y = -3x - 4$$



5.) Solve:

$$\frac{2}{3}x - 15 = 9$$

$$\begin{array}{rcl} \frac{2}{3}x - 15 & = & 9 \\ +15 & & +15 \end{array}$$

$$\begin{array}{rcl} \frac{2}{3}x & = & 24 \\ \frac{2}{3} & & \end{array}$$

$$x = 36$$

6.) Solve:

$$-(x + 5) = 3x + 2(x - 4)$$

$$-(x + 5) = 3x + 2x - 8$$

$$-x - 5 = 5x - 8$$

$$+x \qquad \qquad +x$$

$$-5 = 6x - 8$$

$$+8 \qquad \qquad +8$$

$$\frac{3}{4} = \frac{6x}{6}$$

$$\frac{1}{2} = x$$

7.) Solve:

$$6x + 2x - x - 5 = 12x$$

$$6x + 2x - x - 5 = 12x$$

$$7x - 5 = 12x$$

$$-7x \qquad -7x$$

$$\frac{-5}{5} = \frac{5x}{5}$$

$$-1 = x$$

8.) Solve:

$$\frac{3}{4}x + 6 = \frac{2}{3}x - 8$$

$$\frac{3}{4}x + 6 = \frac{2}{3}x - 8$$

$$\frac{9}{12}x + 6 = \frac{8}{12}x - 8$$

$$-\frac{8}{12}x \quad -\frac{8}{12}x$$

$$\frac{1}{12}x + 6 = -8$$

$$-\frac{6}{6} \quad -6$$

$$12 \cdot \frac{1}{12}x = -14 \cdot 12$$

$$x = -168$$

- 9.) The length of a rectangle is 5 centimeters less than twice its width. The perimeter of the rectangle is 26 cm. What are the dimensions of the rectangle?

$$\text{Width} = w$$

$$\text{length} = (2w - 5)$$

$$\text{Perimeter} = 26$$

$$P = 2w + 2l$$

$$P = 2w + 2l$$

$$26 = 2w + 2(2w - 5)$$

$$26 = 2w + 4w - 10$$

$$26 = 6w - 10$$

$$+10 \qquad \qquad +10$$

$$\frac{36}{6} = \frac{6w}{6}$$

$$6 = w$$

$$\text{Width} = 6 \text{ cm}$$

$$\text{length} = 7 \text{ cm}$$

- 10.) The sum of four consecutive even integers is 460. Write an equation that models this situation and find the value of the four integers.

Consecutive Even Integers: $x, x+2, x+4, x+6$

$$x + x+2 + x+4 + x+6 = 460$$

$$4x + 12 = 460$$

$$\frac{4x}{4} = \frac{448}{4}$$

$$x = 112$$

112, 114, 116,
and 118 are
the four
consecutive
even integers

- 11.) The width of the rectangle is 8 in. more than its length. The perimeter of the rectangle is 24 in. What are the dimensions of the rectangle?

$$\text{Width} = (l + 8)$$

$$\text{Length} = l$$

$$\text{Perimeter} = 24$$

$$P = 2w + 2l$$

$$P = 2w + 2l$$

$$24 = 2(l + 8) + 2l$$

$$24 = 2l + 16 + 2l$$

$$24 = 4l + 16$$

$$-16$$

Width = 10 inches
Length = 2 inches

$$\frac{8}{4} = \frac{4l}{4}$$

$$2 = l$$

- 12.) The sum of four consecutive odd integers is 472. Write an equation that models this situation and find the value of the four even integers.

Consecutive odd integers: $x, x+2, x+4, x+6$

$$x + x+2 + x+4 + x+6 = 472$$

$$\begin{array}{rcl} 4x + 12 & = & 472 \\ -12 & & -12 \end{array}$$

$$\frac{4x}{4} = \frac{460}{4}$$

$$x = 115$$

The 4 consecutive odd integers are 115, 117, 119 and 121