

Score: _____

NAME: Key

Algebra 1 Semester 1

Assessment Training Practice #3A

- 1.) Find the x-intercept and the y-intercept of the graph of the equation: $4x + 5y = 20$.

Graph the equation.

x-intercept: let $y = 0$

$$4x + 5 \cdot 0 = 20$$

$$\frac{4x}{4} = \frac{20}{4}$$

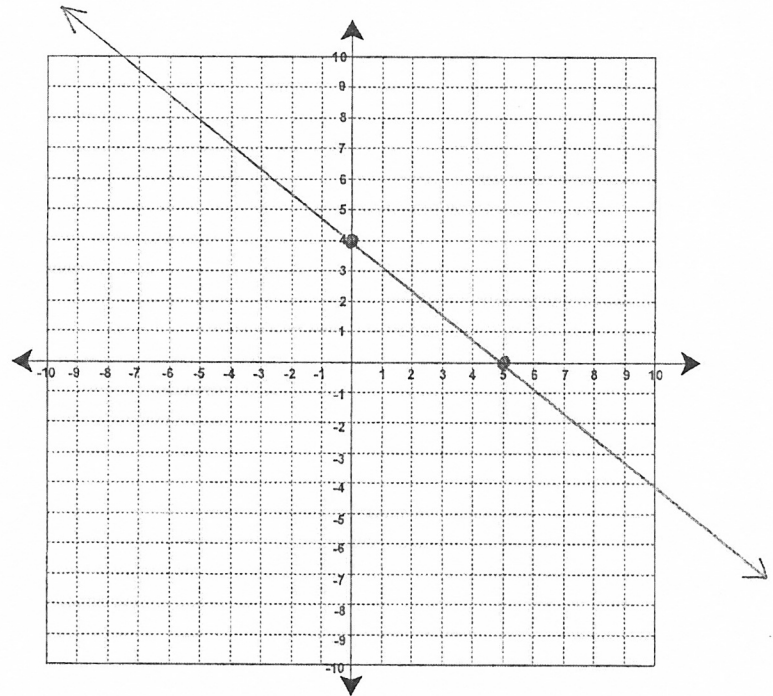
$$x = 5$$

y-intercept: let $x = 0$

$$4 \cdot 0 + 5y = 20$$

$$\frac{5y}{5} = \frac{20}{5}$$

$$y = 4$$



- 2.) Find the x-intercept and the y-intercept of the graph of the equation: $-3x - 8y = 12$.

Graph the equation.

x-intercept: let $y = 0$

$$-3x - 8 \cdot 0 = 12$$

$$\frac{-3x}{-3} = \frac{12}{-3}$$

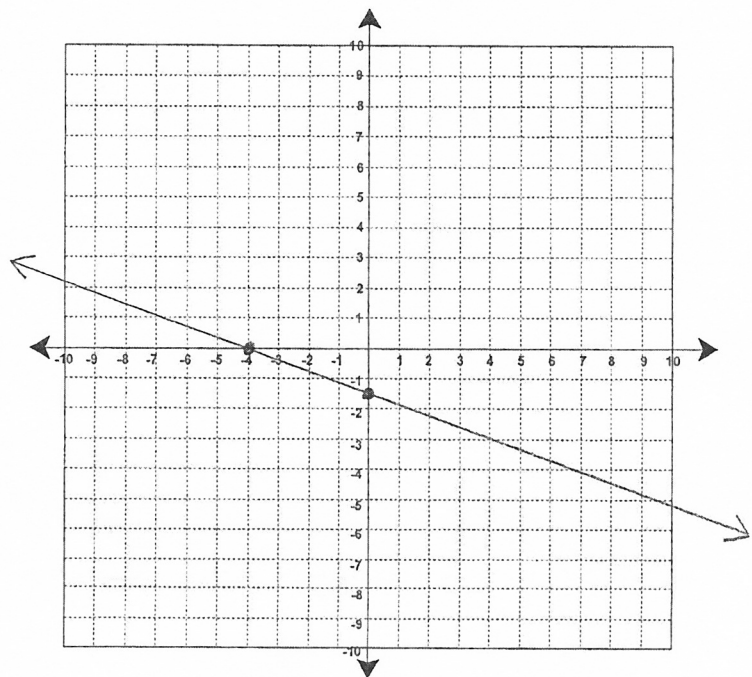
$$x = -4$$

y-intercept: let $x = 0$

$$-3 \cdot 0 - 8y = 12$$

$$\frac{-8y}{-8} = \frac{12}{-8}$$

$$y = -1.5$$



- 3.) A line passes through the points $(-5, 9)$ and $(-2, 0)$. Write an equation for the line. Graph the equation.

$$\begin{matrix} (-5, 9) & (-2, 0) \\ x_1, y_1 & x_2, y_2 \end{matrix}$$

$$m = \frac{0 - 9}{-2 - (-5)}$$

$$m = \frac{-9}{3}$$

$$m = -3$$

$$y = mx + b$$

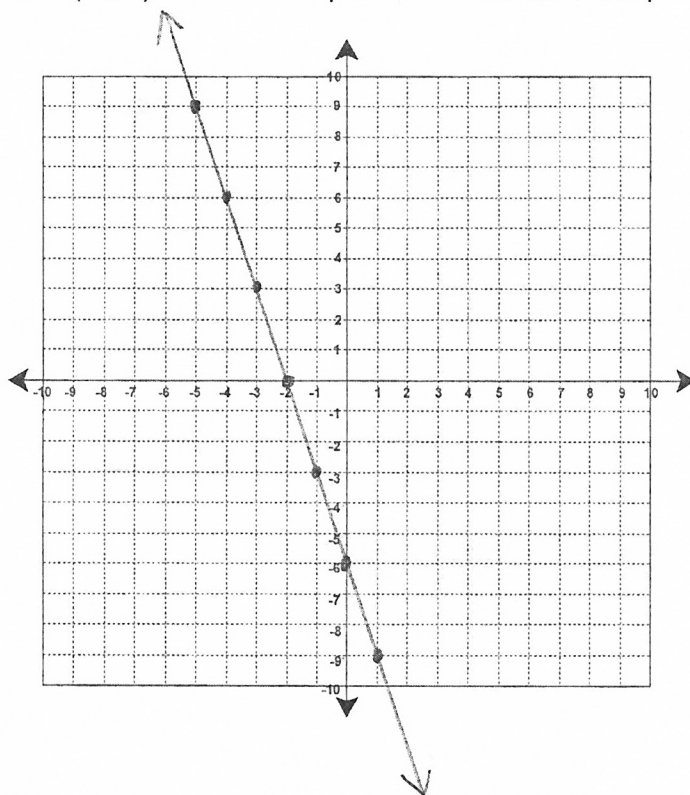
$$9 = -3(-5) + b$$

$$9 = 15 + b$$

$$-15 \quad -15$$

$$-6 = b$$

$$y = -3x - 6$$



- 4.) A line passes through the points $(2, -4)$ and $(-2, 6)$. Write an equation for the line. Graph the equation.

$$\begin{matrix} (2, -4) & (-2, 6) \\ x_1, y_1 & x_2, y_2 \end{matrix}$$

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

$$m = \frac{10}{-4}$$

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

$$y = mx + b$$

$$6 = -\frac{5}{2} \cdot (-2) + b$$

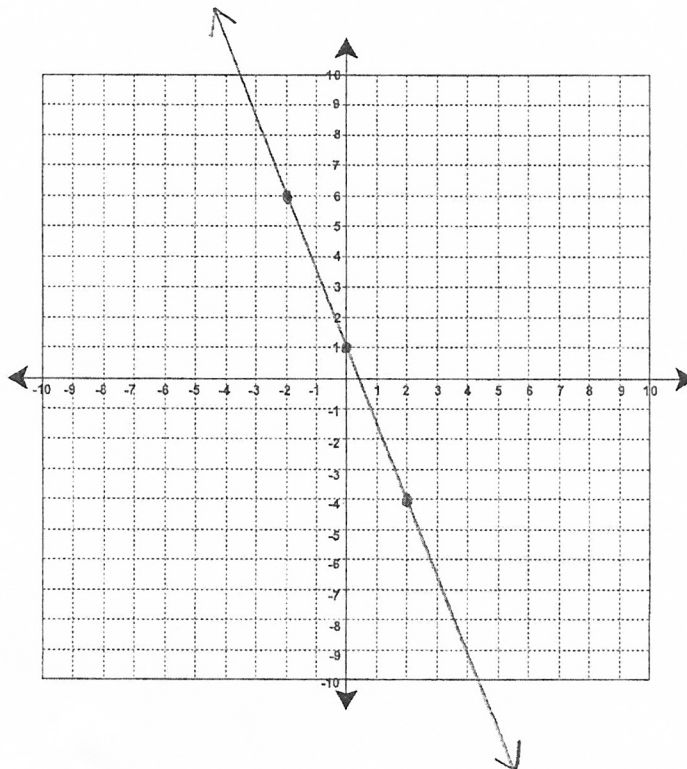
$$6 = \frac{10}{2} + b$$

$$6 = 5 + b$$

$$-5 \quad -5$$

$$1 = b$$

$$y = -\frac{5}{2}x + 1$$



5.) Solve:

$$\frac{4x}{8} + 18 = 38$$

$$\frac{4}{8}x + 18 = 38$$
$$\quad \quad -18 \quad -18$$

$$\frac{\frac{4}{8}x}{\frac{4}{8}} = \frac{20}{\frac{4}{8}}$$

$$x = 40$$

6.) Solve:

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

$$-(x - 2) = 4x + 3x - 9$$

$$-x + 2 = 7x - 9$$
$$+x \quad \quad +x$$

$$2 = 8x - 9$$
$$+9 \quad \quad +9$$

$$\frac{11}{8} = \frac{8x}{8}$$

$$\frac{11}{8} = x$$

7.) Solve:

$$7x + x - x - 6 = 5x$$

$$7x + x - x - 6 = 5x$$

$$7x - 6 = 5x$$
$$-5x \quad \quad -5x$$

$$2x - 6 = 0$$
$$+6 \quad +6$$

$$2x = 6$$
$$\frac{2x}{2} = \frac{6}{2}$$

$$x = 3$$

8.) Solve:

$$\frac{2}{3}x + 5 = \frac{5}{6}x - 3$$

$$\frac{2}{3}x + 5 = \frac{5}{6}x - 3$$

$$\frac{4}{6}x + 5 = \frac{5}{6}x - 3$$

$$-\frac{4}{6}x \quad -\frac{4}{6}x$$

$$5 = \frac{1}{6}x - 3$$

$$+3 \quad +3$$

$$6 \cdot 8 = \frac{1}{6}x \cdot 6$$

$$48 = x$$

9.) The lengths of the sides of a triangle are consecutive even integers. What is the length of the longest side if the perimeter is 36 inches?

Consecutive even Integers: x , $x+2$, $x+4$

$$x + x + 2 + x + 4 = 36$$

$$3x + 6 = 36$$

$$-6 \quad -6$$

$$\frac{3x}{3} = \frac{30}{3}$$

$$x = 10$$

$$x = 10 \text{ inches}$$

$$x + 2 = 12 \text{ inches}$$

$$x + 4 = 14 \text{ inches}$$

The longest side is 14 inches.

- 10.) Suppose I have 100 feet of fencing to build a rectangular dog pen. To fit in the area I have in my backyard, I want to make the length 6 feet longer than the width. How long should the sides be if I want to make sure that I use all the fencing I have?

$$\begin{aligned}\text{Width} &= w \\ \text{length} &= (w + 6) \\ \text{Perimeter} &= 100 \\ P &= 2w + 2l\end{aligned}$$

$$\begin{aligned}P &= 2w + 2l \\ 100 &= 2w + 2(w + 6) \\ 100 &= 2w + 2w + 12 \\ 100 &= 4w + 12 \\ -12 &\quad -12\end{aligned}$$

$$\begin{aligned}\text{Width} &= 22 \text{ ft} \\ \text{length} &= 28 \text{ ft}\end{aligned}$$

$$\begin{aligned}\frac{88}{4} &= \frac{4w}{4} \\ 22 &= w\end{aligned}$$

The length of the sides is 28 ft.

- 11.) 331 students went on a field trip. Six buses were filled and 7 students traveled in cars. How many students were in each bus?

Let x be the number of students on the buses.

$$\begin{aligned}6x + 7 &= 331 \\ -7 &\quad -7 \\ \hline 6x &= 324 \\ \hline 6 &\quad 6 \\ x &= 54\end{aligned}$$

There were 54 students on each bus.

- 12.) The sum of three consecutive integers is 168. Write an equation that models this situation and find the value of the three integers.

Consecutive integers: x , $x+1$, $x+2$

$$x + x + 1 + x + 2 = 168$$

$$\begin{array}{rcl} 3x + 3 & = & 168 \\ -3 & & -3 \end{array}$$

$$\frac{3x}{3} = \frac{165}{3}$$

$$x = 55$$

The 3
consecutive
integers are
55, 56, and 57