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 $y = 0$

$4x + 5 \cdot 0 = 20$

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

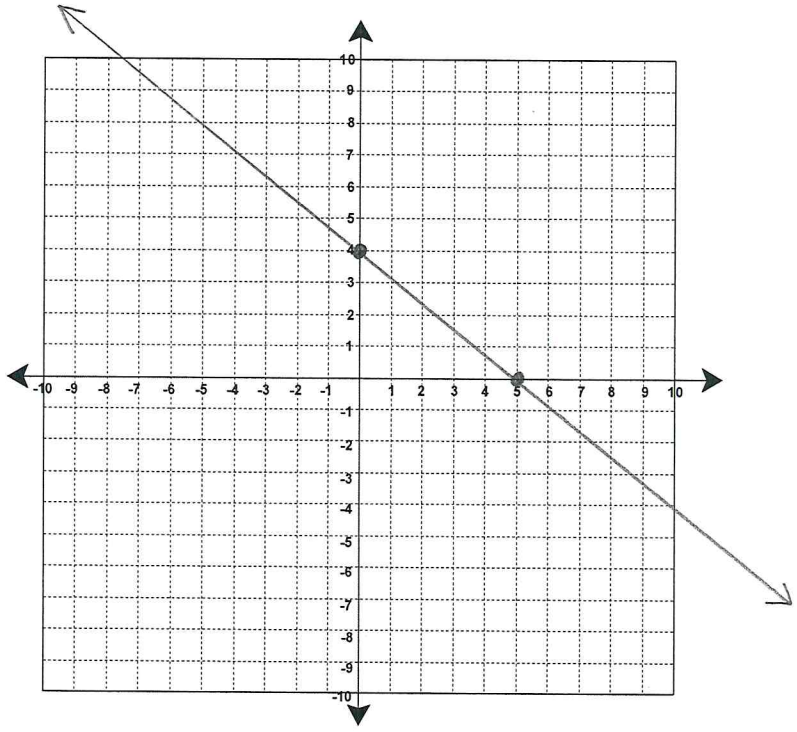
$x = 5$

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 $y = 0$

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

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

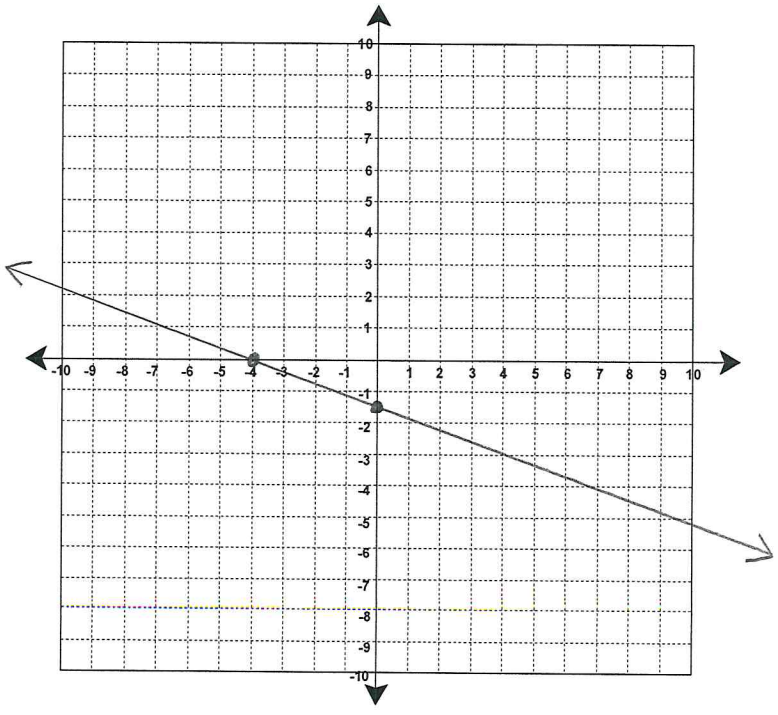
$x = -4$

y-intercept: let $x = 0$

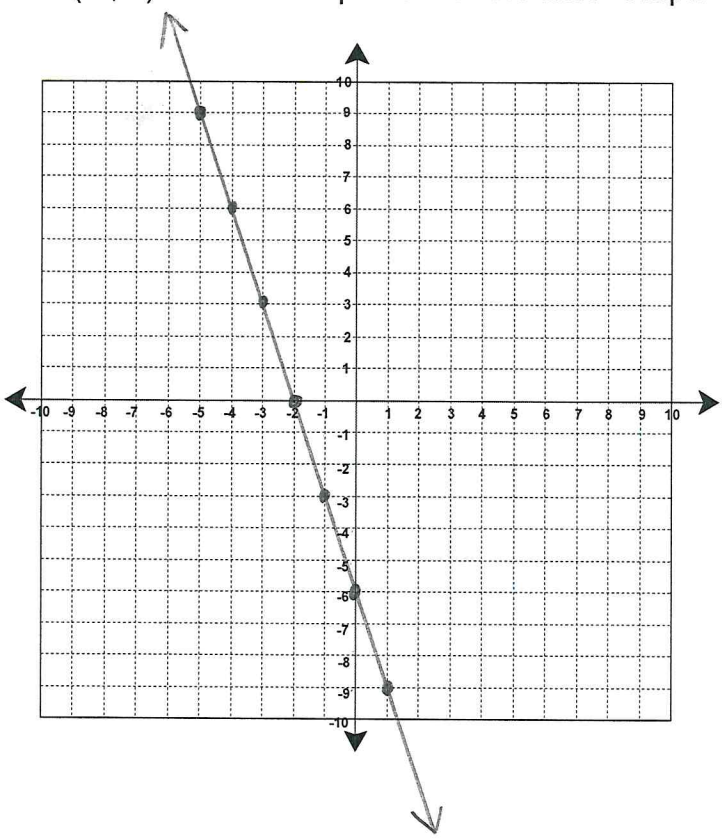
$-3 \cdot 0 - 8y = 12$

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

$y = -1.5$



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



$(-5, 9)\ (-2, 0)$
$x_1\ y_1 \quad x_2\ y_2$

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

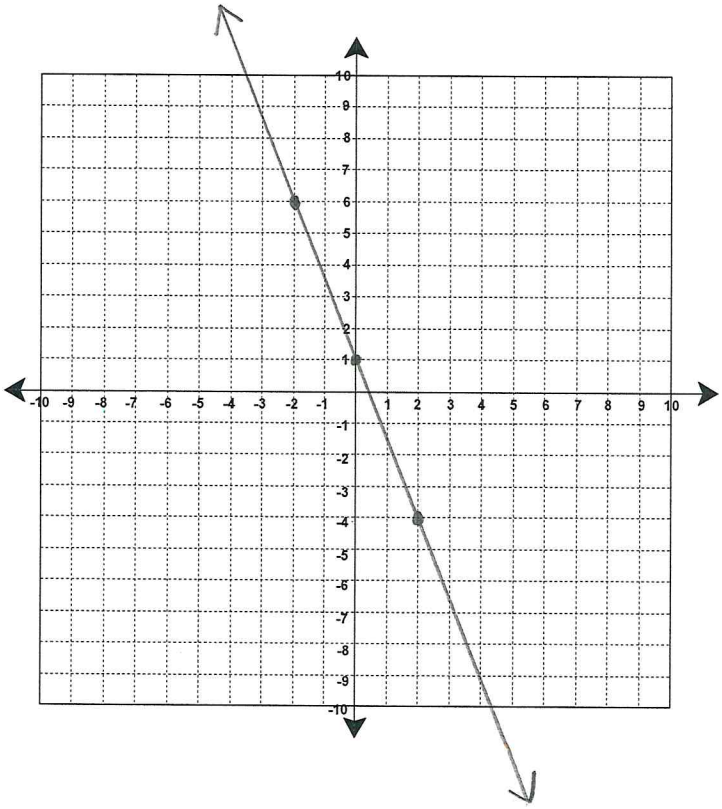
$$m = \frac{-9}{3}$$

$$m = -3$$

$$y = mx + b$$
$$9 = -3(-5) + b$$
$$9 = 15 + b$$
$$-15 \quad -15$$
$$-6 = b$$

$$y = -3x - 6$$

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



$(2, -4)\ (-2, 6)$
$x_1\ y_1 \quad x_2\ y_2$

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

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

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

$$y = mx + b$$
$$6 = \frac{-5}{2} \cdot -2 + b$$
$$6 = \frac{10}{2} + b$$
$$6 = 5 + b$$
$$-5 \quad -5$$
$$1 = b$$

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

5.) Solve: $\frac{4x}{8} + 18 = 38$

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

$-18 \quad -18$

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

$x = 40$

6.) Solve: $-(x - 2) = 4x + 3(x - 3)$

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

$-x + 2 = 7x - 9$

$+x \qquad +x$

$2 = 8x - 9$

$+9 \qquad +9$

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

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

7.) Solve: $7x + x - x - 6 = 5x$

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

$7x - 6 = 5x$

$-5x \qquad -5x$

$2x - 6 = 0$

$+6 \quad +6$

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

$x = 3$

8.) Solve: $\frac{2}{3}x + 5 = \frac{5}{6}x - 3$

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

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

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

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

$+3 \qquad +3$

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

$48 = x$

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, $x+2$, $x+4$

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

$3x + 6 = 36$

$-6 \quad -6$

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

$x = 10$

$x = 10$ inches

$x + 2 = 12$ inches

$x + 4 = 14$ 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?

Width = w
length = $(w+6)$
Perimeter = 100
$P = 2w + 2l$

$P = 2w + 2l$
$100 = 2w + 2(w+6)$
$100 = 2w + 2w + 12$
$100 = 4w + 12$
$-12 \quad -12$
$\frac{88}{4} = \frac{4w}{4}$
$22 = w$

Width = 22 ft
length = 28 ft

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.

$6x + 7 = 331$
$-7 \quad -7$
$\frac{6x}{6} = \frac{324}{6}$
$x = 54$

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, $x+1$, $x+2$

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

$$3x + 3 = 168$$

$$-3 \quad -3$$

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

$$x = 55$$

The 3 consecutive integers are 55, 56, and 57