

Change the following into appropriate mathematical statement (expressions, equations, or inequalities).

1.) Ten less than the product of three and x is greater than twenty.

$$\underline{3x - 10 > 20}$$

Simplify the following expression. If your answer is not an integer, express it as reduced fraction.

$$2.) \frac{20 - 4(5 - 3^2)}{11 - 7 + 2} = \frac{20 - 4(5 - 9)}{4 + 2} = \frac{20 - 4(-4)}{6} = \frac{20 + 16}{6} = \frac{36}{6} = \boxed{6}$$

Solve the following systems of linear equations.

$$3.) \begin{cases} x + 2y = -8 \\ 2x - 5y = 2 \end{cases}$$

$$x = -2y - 8$$

$$2(-2y - 8) - 5y = 2$$

$$-4y - 16 - 5y = 2$$

$$-9y = 18$$

$$y = -2$$

$$x = -2(-2) - 8$$

$$x = -4$$

$(-4, -2)$

$$\begin{cases} -2x - 4y = 16 \\ 2x - 5y = 2 \end{cases}$$

$$-9y = 18$$

$$y = -2$$

$$x = -4$$

$$\begin{cases} 5x + 10y = -40 \\ 4x - 10y = 4 \end{cases}$$

$$9y = -36$$

$$y = -4$$

$$x = -2$$

In the following problems, solve the equations. If your answer is not an integer, express it as reduced fraction.

$$4.) 4c - 6 = 2(5 - 7c)$$

$$4c - 6 = 10 - 14c$$

$$18c = 16$$

$$c = \frac{16}{18} = \frac{8}{9}$$

$$5.) w + (7w - 3) + (4w - 9) = 180$$

$$12w - 12 = 180$$

$$12w = 192$$

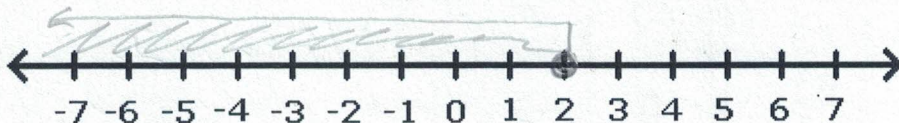
$$w = 16$$

Solve the following inequality and graph the solution on the number line provided.

$$6.) 5 - 2x \geq 4x - 7$$

$$-6x \geq -12$$

$$x \leq 2$$





Factor the following quadratic expressions.

7.)  $2a^2 - 11a + 5$

$ac = 10$

1, 10

2, 5

$2a^2 - 1a - 10a + 5$

$a(2a-1) - 5(2a-1)$

$(2a-1)(a-5)$

Factor and solve.

8.)  $x^2 + 5x - 24 = 0$

$ac = 24$

1, 24

2, 12

3, 8

4, 6

$x^2 - 3x + 8x - 24 = 0$

$x(x-3) + 8(x-3) = 0$

$(x-3)(x+8) = 0$

$x-3 = 0 \quad x+8 = 0$

$x = 3 \quad x = -8$

$x = 3, -8$

The following problems contains a line in 3 forms: a **table** of values, an **equation**, and a **graph**. One or more parts is missing from each problem. Complete any of the missing information.

Problem #	Table of values (x,y)	Equation (y = mx + b form)	Graph												
9.)	<table border="1"> <thead> <tr> <th>x</th> <th>y</th> </tr> </thead> <tbody> <tr> <td>-4</td> <td>6</td> </tr> <tr> <td>-2</td> <td>2</td> </tr> <tr> <td>0</td> <td>-2</td> </tr> <tr> <td>2</td> <td>-6</td> </tr> <tr> <td>4</td> <td>-10</td> </tr> </tbody> </table>	x	y	-4	6	-2	2	0	-2	2	-6	4	-10	$y = -2x - 2$	
x	y														
-4	6														
-2	2														
0	-2														
2	-6														
4	-10														