Exercise 3 Name _____

Solve the following equations and check where appropriate:

1.

$$\begin{aligned} 6b + 21 &= 84 - 3b \\ 9b &= 63 \\ b &= 7 \end{aligned}$$

2.

$$\begin{aligned} 3(x-1) - 12 &= 0 \\ 3x - 3 - 12 &= 0 \\ 3x - 15 &= 0 \\ 3x &= 15 \\ x &= 5 \end{aligned}$$

3.

$$|6 - 2| = |4| = 4$$

4.

$$|6 + 2| = |8| = 8$$

5.

$$\begin{aligned} 4 + |12x - 8| &= 4 \\ |12x - 8| &= 0 \\ 12x - 8 &= 0 \\ 12x &= 8 \\ x &= \frac{8}{12} \\ x &= \frac{2}{3} \end{aligned}$$

6.

$$\begin{aligned} x - 5 &> 2x + 15 \\ -x &> 20 \\ x &< -20 \end{aligned}$$

Find and graph the equation of the lines through these points:

7.

$$(2,1)(7,6)$$
$$m = \frac{6-1}{7-2} = \frac{5}{5} = 1$$
$$y = x + b$$
$$1 = 2 + b$$
$$b = -1$$
$$y = x - 1$$

8.

$$(4,0)(3,2)$$
$$m = \frac{2-0}{3-4} = \frac{2}{-1} = -2$$
$$y = -2x + b$$
$$0 = -8 + b$$
$$b = 8$$
$$y = -2x + 8$$

Use the quadratic equation to solve the following equation, and check your solution:

9.

$$x^2 + 2x - 3 = 0$$
$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$
$$= \frac{-2 \pm \sqrt{4 - 4(1)(-3)}}{2}$$
$$= \frac{-2 \pm \sqrt{16}}{2}$$
$$= \frac{-2 \pm 4}{2}$$

The roots are -3, 1