

## Homework 39.3

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Solve each equation. Remember to check for extraneous solutions.

1)  $\sqrt{x} = 1$

$$(\sqrt{x})^2 = 1^2$$

$$x = 1$$

2)  $\sqrt{p-2} = 5$

$$(\sqrt{p-2})^2 = 5^2$$

$$\begin{array}{r} p-2 = 25 \\ +2 \quad +2 \end{array}$$

$$p = 27$$

3)  $-2 + \sqrt{7r+11} = 7$

$$\begin{array}{r} +2 \quad +2 \\ \hline (\sqrt{7r+11})^2 = 9^2 \end{array}$$

$$\begin{array}{r} 7r+11 = 81 \\ -11 \quad -11 \end{array}$$

$$\begin{array}{r} 7r = 70 \\ 7 \quad 7 \end{array}$$

$$r = 10$$

4)  $\sqrt{11-m} = 1$

$$(\sqrt{11-m})^2 = 1^2$$

$$\begin{array}{r} 11-m = 1 \\ -11 \quad -11 \\ \hline -m = -10 \end{array}$$

$$\frac{-m}{-1} = \frac{-10}{-1}$$

$$m = 10$$

5)  $\sqrt{34-2x} = 4$

$$(\sqrt{34-2x})^2 = 4^2$$

$$\begin{array}{r} 34-2x = 16 \\ -34 \quad -34 \end{array}$$

$$-2x = -18$$

$$\frac{-2x}{-2} = \frac{-18}{-2}$$

$$x = 9$$

6)  $9 + \sqrt{\frac{n}{8}} = 14$

$$\begin{array}{r} -9 \quad -9 \\ \hline (\sqrt{\frac{n}{8}})^2 = (5)^2 \end{array}$$

$$(8) \frac{n}{8} = 25 (8)$$

$$n = 200$$

Solve each system by elimination.

7)  $\begin{array}{l} (-2x - 10y = -28) \rightarrow \\ 5x - 20y = 25 \end{array}$

$$\begin{array}{r} 4x + 20y = 56 \\ 5x - 20y = 25 \end{array}$$

$$\begin{array}{r} 9x = 81 \\ 9 \quad 9 \end{array}$$

$$x = 9$$

$$(9, 1)$$

$$y = 1$$

$$5(9) - 20y = 25$$

$$\begin{array}{r} 45 - 20y = 25 \\ -45 \quad -45 \end{array}$$

$$\begin{array}{r} -20y = -20 \\ -20 \quad -20 \end{array}$$

8)  $\begin{array}{l} (5x - 4y = 8) \rightarrow \\ -10x - y = 2 \end{array}$

$$\begin{array}{r} 10x - 8y = 16 \\ -10x - y = 2 \end{array}$$

$$\begin{array}{r} -9y = 18 \\ -9 \quad -9 \end{array}$$

$$y = -2$$

$$5x - 4(-2) = 8$$

$$\begin{array}{r} 5x + 8 = 8 \\ -8 \quad -8 \end{array}$$

$$\begin{array}{r} 5x = 0 \\ 5 \quad 5 \end{array}$$

$$x = 0$$

$$(0, -2)$$

Write the slope-intercept form of the equation of the line through the given points.

9) through:  $(-1, 4)$  and  $(-1, -1)$

$$m = \frac{4 - (-1)}{-1 - (-1)} = \frac{5}{0}$$

undefined slope

Vertical line

$$x = -1$$

10) through:  $(-2, 4)$  and  $(5, 0)$

$$m = \frac{4 - 0}{-2 - 5} = \frac{4}{-7}$$

$$y - 4 = \frac{-4}{7}(x + 2)$$

$$7(y - 4) = -4(x + 2)$$

$$\begin{array}{r} 7y - 28 = -4x - 8 \\ +28 \quad +28 \end{array}$$

$$\begin{array}{r} 7y = -4x + 20 \\ 7 \quad 7 \quad 7 \end{array}$$

$$y = \frac{-4}{7}x + \frac{20}{7}$$

## Answers to Homework 39.3

1)  $\{1\}$

5)  $\{9\}$

9)  $x = -1$

2)  $\{27\}$

6)  $\{200\}$

10)  $y = -\frac{4}{7}x + \frac{20}{7}$

3)  $\{10\}$

7)  $(9, 1)$

4)  $\{10\}$

8)  $(0, -2)$