

7.4 Practice Problem Answers

Directions: Solve the equation.

1) $|x| = 5$

$x = 5$ or $x = -5$

2) $|r| = \frac{1}{2}$

$r = \frac{1}{2}$ or $r = -\frac{1}{2}$

3) $|3p + 7| = 4$

$$\begin{array}{l|l} 3p+7=4 & 3p+7=-4 \\ -7 & -7 \end{array}$$

$$\begin{array}{l|l} \frac{3p}{3} = \frac{-3}{3} & \frac{3p}{3} = \frac{-11}{3} \end{array}$$

$p = -1$ or $p = -\frac{11}{3}$

4) $\frac{3|13-2t|}{3} = \frac{15}{3}$

$|13-2t| = 5$

$$\begin{array}{l|l} 13-2t=5 & 13-2t=-5 \\ -13 & -13 \end{array}$$

$$\begin{array}{l|l} \frac{-2t}{-2} = \frac{-8}{-2} & \frac{-2t}{-2} = \frac{-18}{-2} \end{array}$$

$t = 4$ or $t = 9$

5) $\frac{4|2k+3|}{4} - 2 = 6$
+2 +2

$\frac{4|2k+3|}{4} = \frac{8}{4}$

$|2k+3| = 2$

$$\begin{array}{l|l} 2k+3=2 & 2k+3=-2 \\ -3 & -3 \end{array}$$

$$\begin{array}{l|l} \frac{2k}{2} = \frac{-1}{2} & \frac{2k}{2} = \frac{-5}{2} \end{array}$$

$k = -\frac{1}{2}$ or $k = -\frac{5}{2}$

Directions: Describe and correct the error in solving the absolute value equation.

$$6) \begin{array}{l} |x + 4| = 13 \\ x + 4 = 13 \\ x = 9 \end{array}$$

x+4 should = -13 or 13. They just did 13.

$$\begin{array}{l} x+4 = -13 \\ -4 \quad -4 \end{array}$$

$$x = -17 \text{ or } 9$$

Directions: Solve the equation if possible.

$$7) |x - 1| + 5 = 2$$

$$\begin{array}{r} -5 \quad -5 \\ \hline |x+1| = -3 \end{array}$$

NO SOLUTION

$$8) -3 \left| 1 - \frac{2}{3}v \right| = -9$$

$$\begin{array}{r} -3 \quad -3 \\ \hline \left| 1 - \frac{2}{3}v \right| = 3 \end{array}$$

$$\begin{array}{l} 1 - \frac{2}{3}v = 3 \quad | \quad 1 - \frac{2}{3}v = -3 \\ -1 \quad -1 \quad -1 \quad -1 \end{array}$$

$$\begin{array}{l} -\frac{2}{3}v = 2 \quad | \quad -\frac{2}{3}v = -4 \\ \frac{-2}{3} \quad \frac{-2}{3} \quad \frac{-2}{3} \quad \frac{-2}{3} \end{array}$$

$$v = -3 \text{ or } 6$$

$$9) \begin{array}{r} -8 - 9|4p + 2| = -35 \\ +8 \quad +8 \end{array}$$

$$\begin{array}{r} -9|4p+2| = -27 \\ -9 \quad -9 \end{array}$$

$$|4p+2| = 3$$

$$\begin{array}{l} 4p+2 = 3 \quad | \quad 4p+2 = -3 \\ -2 \quad -2 \quad -2 \quad -2 \\ \hline 4p = 1 \quad | \quad 4p = -5 \\ \frac{4p}{4} = \frac{1}{4} \quad | \quad \frac{4p}{4} = \frac{-5}{4} \end{array}$$

$$p = \frac{1}{4} \text{ or } \frac{-5}{4}$$

