

Solve each.

1. $|4x + 7| - 9 > 46$

2. $3|x - 4| + 8 = 14$

3. $|2x - 11| \leq 93$

4. $|x - 6| + 1 = 5x + 3$

Bellwork Alg 2A Wednesday, October 5, 2016

Answers

Solve each.

1. $|4x + 7| - 9 > 46$

$|4x + 7| > 55 \rightarrow$ more than 55 from zero

$$\begin{array}{l} 4x + 7 < -55 \quad \text{or} \quad 4x + 7 > 55 \\ -7 \quad -7 \quad \quad \quad -7 \quad -7 \\ \hline 4x < -62 \quad \quad \quad 4x > 48 \\ \hline \frac{4x}{4} < \frac{-62}{4} \quad \quad \quad \frac{4x}{4} > \frac{48}{4} \end{array}$$

$x < -15.5 \text{ or } x > 12$

3. $|2x - 11| \leq 93$

$|2x - 11| \leq 93 \rightarrow$ less than 93 from zero

$$\begin{array}{l} -93 \leq 2x - 11 \leq 93 \\ +11 \quad +11 \quad +11 \\ \hline -82 \leq 2x \leq 104 \\ \hline \frac{-82}{2} \leq \frac{2x}{2} \leq \frac{104}{2} \end{array}$$

$-41 \leq x \leq 52$

2. $3|x - 4| + 8 = 14$

$$\begin{array}{l} -8 \quad -8 \\ 3|x - 4| = 6 \\ \hline \frac{3|x - 4|}{3} = \frac{6}{3} \\ |x - 4| = 2 \end{array}$$

$$\begin{array}{l} x - 4 = -2 \\ +4 \quad +4 \end{array}$$

$$\begin{array}{l} x - 4 = 2 \\ +4 \quad +4 \end{array}$$

$x = 2, 6$

4. $|x - 6| + 1 = 5x + 3$

$$\begin{array}{l} -1 \quad -1 \\ |x - 6| = 5x + 2 \end{array}$$

$$x - 6 = -(5x + 2)$$

$$\begin{array}{l} x - 6 = -5x - 2 \\ +5x \quad +5x \end{array}$$

$$\begin{array}{l} 6x - 6 = -2 \\ +6 \quad +6 \end{array}$$

$$6x = 4$$

$$x = \frac{4}{6} = \frac{2}{3}$$

$$x - 6 = 5x + 2$$

$$\begin{array}{l} -x \quad -x \\ -6 = 4x + 2 \\ -2 \quad -2 \end{array}$$

$$\begin{array}{l} -8 = 4x \\ \quad 1 \end{array}$$

$$x = -2$$

extraneous