

# Absolute Value Equations:

$$|2x+6| = 10$$

↓                      ↓

$\begin{array}{r} 2x+6 = 10 \\ -6 \quad -6 \\ \hline 2x = 4 \\ \frac{2}{2} \quad \frac{2}{2} \\ \hline x = 2 \end{array}$	$\begin{array}{r} 2x+6 = -10 \\ -6 \quad -6 \\ \hline 2x = -16 \\ \frac{2}{2} \quad \frac{2}{2} \\ \hline x = -8 \end{array}$
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$|2 \cdot 2 + 6| \stackrel{?}{=} 10$                        $|2 \cdot (-8) + 6| \stackrel{?}{=} 10$

✓                                              ✓

$$|x-1| + 3 = 14$$

-3                      -3

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$$|x-1| = 11$$

↓                      ↓

$\begin{array}{r} x-1 = 11 \\ +1 \quad +1 \\ \hline x = 12 \end{array}$	$\begin{array}{r} x-1 = -11 \\ +1 \quad +1 \\ \hline x = -10 \end{array}$
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$$|3(x+2)| + 5 = 2$$

-5                      -5

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$$|3(x+2)| = -3$$

↓

$\begin{array}{r} 3x+6 = -3 \\ \hline 3x = -9 \\ \frac{3}{3} \quad \frac{3}{3} \\ \hline x = -3 \end{array}$	$\begin{array}{r} 3x+6 = 3 \\ \hline 3x = -3 \\ \frac{3}{3} \quad \frac{3}{3} \\ \hline x = -1 \end{array}$
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~~$|3(-3+2)| + 5 \stackrel{?}{=} 2$~~   
 ~~$|3(-1+2)| + 5 \stackrel{?}{=} 2$~~   
 ~~$| -3 | + 5 = 2$~~

**Abs. Val = - #**  
**No Solutions**  
 $\emptyset$