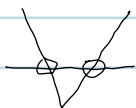


## Section 2.6 Absolute value equations

$$|-3| = 3$$

$$|x| = 4$$

4   -4



$$|x - 3| = 5$$

5 or -5

$$x - 3 = 5$$

+3   +3

$$x = 8$$

$$x - 3 = -5$$

+3   +3

$$x = -2$$

check  $|x - 3| = -5$

$$|-2 - 3| = 5$$

$$|-5| = 5$$

$$5 = 5 \quad \checkmark$$

$$2|x - 1| + 7 = 15$$

-7   -7

$$2|x - 1| = 8$$

2   2

$$|x - 1| = 4$$

$$x - 1 = 4$$

+1   +1

$$x = 5$$

$$x - 1 = -4$$

+1   +1

$$x = -3$$

$$\{-3, 5\}$$

LCD  
2

$$|\frac{1}{2}x - 2| = -3$$

$$\frac{1}{2}x - 2 = -3$$

$$x - 4 = -6$$

$$+4   +4$$

$$x = -2$$

$$\frac{1}{2}x - 2 = 3$$

$$x - 4 = 6$$

$$+4   +4$$

$$x = 10$$

$$|\frac{1}{2}(-2) - 2| = -3$$

$$|-3| = -3$$

$$3 = -3$$

no solution

$$| \quad | = -3$$

no  
#

∅

$$\frac{-3|x-2|}{-3} = \frac{-6}{-3}$$

$$|x-2| = 2$$

$$|5x-7| = 4 \quad \text{ex}$$

$$|5x-7| = |3x+11|$$

$5x-7 = 3x+11$	$5x-7 = -(3x+11)$
$\begin{array}{r} 5x-7 \\ -3x \end{array}$	$\begin{array}{r} 5x-7 = -3x-11 \\ +3x \end{array}$
$2x-7 = 11$	$8x-7 = -11$
$\begin{array}{r} 2x-7 \\ +7 \end{array}$	$\begin{array}{r} 8x-7 \\ +7 \end{array}$
$2x = 18$	$8x = -4$
$\frac{2x}{2} = \frac{18}{2}$	$\frac{8x}{8} = \frac{-4}{8}$
$x = 9$	$x = \frac{-4}{8} \rightarrow -\frac{1}{2}$