

Solving a Linear Equation with Absolute Value: Problem Type 2

• Example 1

Solve for x .

$$|2 - 3x| + 5 = 10$$

We must first isolate the absolute value on the left side of the equation. This is easily done by subtracting 5 from both sides for the result

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

We can now proceed.

$$\begin{array}{lll} 2 - 3x = 5 & \text{or} & 2 - 3x = -5 & \text{Subtract 2.} \\ -3x = 3 & & -3x = -7 & \text{Divide by } -3. \\ x = -1 & & x = \frac{7}{3} & \end{array}$$

The solution is $x = -1$ or $x = \frac{7}{3}$.

● ● ● CHECK YOURSELF 1

Solve for x .

$$|5 - 2x| - 4 = 7$$

● ● ● CHECK YOURSELF ANSWER

1. $-3, 8$.

2.24 Exercises

Name _____

Section _____

Date _____

A N S W E R S

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

Solve each equation.

1. $|x - 2| + 3 = 5$

2. $|x + 5| - 2 = 5$

3. $8 - |x - 4| = 5$

4. $10 - |2x + 1| = 3$

5. $|x - 7| + 4 = 16$

6. $|x + 4| - 8 = -3$

7. $-7 - |3x - 5| = -20$

8. $12 + |6x - 2| = 36$