2.24 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.

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

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

CHECK YOURSELF 1

Solve for x.

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

CHECK YOURSELF ANSWER

1. $-3, 8$.

2.24 Exercises

Name

Section Date

ANSWERS

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