



# Solving a Linear Equation with Several Occurrences of the Variable: Problem Type 1

## • Example 1

Solve

$$2(3x + 4) = 5x - 6$$

Applying the distributive property on the left, we have the equivalent equation

$$6x + 8 = 5x - 6$$

We can then proceed as before:

$6x + 8 = 5x - 6$	
$\frac{-5x}{x + 8} = \frac{-5x}{-6}$	Subtract 5x on both sides.
$\frac{-8}{x} = \frac{-8}{-14}$	Subtract 8 on both sides.

The solution is  $-14$ . We will leave the checking of this result to the reader.

**Remember:** Always return to the original equation to check.

### • • • CHECK YOURSELF 1

Solve and check each of the following equations.

a.  $4(5x - 2) = 19x + 4$

b.  $3(5x + 1) = 2(7x - 3) - 4$

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### • • • CHECK YOURSELF ANSWER

1. (a) 12; (b)  $-13$ .

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# 2.9 Exercises

Name \_\_\_\_\_

Section \_\_\_\_\_

Date \_\_\_\_\_

## A N S W E R S

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_
11. \_\_\_\_\_
12. \_\_\_\_\_

Solve and check the following equations.

1.  $4(3x + 4) = 11x - 2$

2.  $2(5x - 3) = 9x + 7$

3.  $4(2x + 3) = 7x + 5$

4.  $5(3x - 1) - 6x = 3x - 2$

5.  $5x + 2(3x - 4) = 14x + 7$

6.  $5x = 3(x - 6)$

7.  $5x = 2(x + 12)$

8.  $7(2x - 3) = 20x$

9.  $4(3x + 5) = 18x$

10.  $6(6 - x) = 3x$

11.  $5(8 - x) = 3x$

12.  $4(x + 3) = 12x - 2$