

# 3.4

## Solutions to a Linear Equation in Two Variables: Problem Type 1

### • Example 1

Find four pairs of numbers  $(x, y)$  satisfying the equation

$$2x + y = 8$$

Each such pair is a *solution* of the equation.

Generally, you'll want to pick values for  $x$  (or for  $y$ ) so that the resulting equation in one variable is easy to solve.

Solution with  $x = 2$ :

$$2 \cdot 2 + y = 8$$

$$4 + y = 8$$

$$y = 4$$

$(2, 4)$  is a solution.

Solution with  $y = 6$ :

$$2x + 6 = 8$$

$$2x = 2$$

$$x = 1$$

$(1, 6)$  is a solution.

Solution with  $x = 0$ :

$$2 \cdot 0 + y = 8$$

$$y = 8$$

$(0, 8)$  is a solution.

Solution with  $y = 0$ :

$$2x + 0 = 8$$

$$2x = 8$$

$$x = 4$$

$(4, 0)$  is a solution.

The solutions  $(0, 8)$  and  $(4, 0)$  will have special significance in graphing. They are also easy to find!

### ● ● ● CHECK YOURSELF 1

Find four pairs of numbers  $(x, y)$  satisfying the equation  $x - 3y = 12$ .

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● ● ● **CHECK YOURSELF ANSWER**

1.  $(6, -2)$ ,  $(3, -3)$ ,  $(0, -4)$ , and  $(12, 0)$  are four possibilities.
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# 3.4 Exercises

Name \_\_\_\_\_

Section \_\_\_\_\_

Date \_\_\_\_\_

Find four solutions for each of the following equations. **Note:** Your answers may vary from those shown in the answer section.

1.  $x - y = 7$

2.  $x + y = 18$

3.  $2x - y = 6$

4.  $3x - y = 12$

5.  $x + 4y = 8$

6.  $x + 3y = 12$

7.  $2x - 5y = 10$

8.  $2x + 7y = 14$

9.  $y = 2x + 3$

10.  $y = 8x - 5$

11.  $x + y = 10$

12.  $2x - 3y = 6$

13.  $x - 2y = 4$

14.  $y = -\frac{3}{2}x + 2$

15.  $x - y = 9$

16.  $5x - 6y = 30$

## A N S W E R S

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

8. \_\_\_\_\_

9. \_\_\_\_\_

10. \_\_\_\_\_

11. \_\_\_\_\_

12. \_\_\_\_\_

13. \_\_\_\_\_

14. \_\_\_\_\_

15. \_\_\_\_\_

16. \_\_\_\_\_