



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 $x - 3y = 12$.

● ● ● **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. _____