

# Lesson 5.1 • Solving Systems of Equations

Name \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

1. Verify whether or not the given ordered pair is a solution to the system.

If it is not a solution, explain why not.

a. (4, 3)

$$\begin{cases} y = 0.5x + 1 \\ y = 0.6x + 0.6 \end{cases}$$

b. (-4, 0)

$$\begin{cases} y = 0.5x + 2 \\ y = -\frac{4}{3}x + 2 \end{cases}$$

c. (5, -3)

$$\begin{cases} y = -0.75x + 0.75 \\ y = -\frac{2}{3}x + \frac{1}{3} \end{cases}$$

d. (3, -2)

$$\begin{cases} y = -5x + 13 \\ y = \frac{7}{3}x - 9 \end{cases}$$

e. (-3.5, -1.5)

$$\begin{cases} y = 2.5x + 7.25 \\ y = -2.5x - 10.25 \end{cases}$$

f.  $(\frac{1}{2}, -\frac{2}{3})$

$$\begin{cases} y = 4x - 2\frac{2}{3} \\ y = 6x - \frac{5}{3} \end{cases}$$

2. Graph each system

to find the point of intersection.

a.  $\begin{cases} y = 3x - 3 \\ y = -3x + 9 \end{cases}$

b.  $\begin{cases} y = -x + 4 \\ y = -\frac{2}{3}x + 3 \end{cases}$

c.  $\begin{cases} y = -2x + 2 \\ y = -1.5x + 2.5 \end{cases}$

d.  $\begin{cases} y = \frac{1}{2}x - 3.5 \\ y = 3x - 11 \end{cases}$

e.  $\begin{cases} y = \frac{3}{4}x - 4 \\ y = x - 5 \end{cases}$

f.  $\begin{cases} y = 2x - 5 \\ y = -3x + 15 \end{cases}$

g.  $\begin{cases} y = 2.5x + 4 \\ y = 5x + 9 \end{cases}$

h.  $\begin{cases} y = \frac{3}{2}x + 3 \\ y = -3x - 15 \end{cases}$

i.  $\begin{cases} y = -6x + 5 \\ y = 4x - 5 \end{cases}$

3. Use Algebra to find the solution to each system of equations. (You'll need to solve some of the equations for  $y$  first.)

a.  $\begin{cases} y = -4x + 5 \\ y = 3x - 9 \end{cases}$

b.  $\begin{cases} y = x + 6 \\ y = -2x \end{cases}$

c.  $\begin{cases} 3x - 2y = 4 \\ 2x + y = 5 \end{cases}$

d.  $\begin{cases} y = \frac{2}{3}x - 6 \\ y = -3x + 16 \end{cases}$

e.  $\begin{cases} y = 3x + 8 \\ 2x + 3y = 2 \end{cases}$

f.  $\begin{cases} y = -3x - 6 \\ y = 4x + 8 \end{cases}$

## Lesson 5.2 • Solving Systems of Equations Using Substitution

Name \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

1. Verify whether or not the given ordered pair is a solution to the system.  
If it is not a solution, explain why not.

a. (4, 8)

$$\begin{cases} y = 2x \\ y = -4x + 12 \end{cases}$$

b. (2, -6)

$$\begin{cases} 3.5x + 2.5y = -8 \\ 1.5x - 3.5y = 22 \end{cases}$$

c. (2, -1)

$$\begin{cases} y = -0.75x + 0.5 \\ y = -1.5x + 5 \end{cases}$$

d. (-3, -2)

$$\begin{cases} 2x - 5y = 4 \\ x - 3y = 3 \end{cases}$$

2. Solve each equation

a.  $7 - 5x = 28 + 2x$

b.  $3x - 9 = x - 1$

c.  $5 - 2y = -3y - 2$

3. Substitute  $2 + 5x$  for  $y$  to rewrite each expression in terms of one variable. Combine like terms.

a.  $3x - y$

b.  $2y - 10x$

c.  $-4x + 3y$

4. Solve each system of equations using the substitution method, and check your solutions.

a.  $\begin{cases} y = -2x + 3 \\ y = 1.5x - 0.5 \end{cases}$

b.  $\begin{cases} 3x - 11y = 2 \\ x - 5y = 2 \end{cases}$

c.  $\begin{cases} y = 6x - 3 \\ y = -3x + 6 \end{cases}$

d.  $\begin{cases} x + 2y = 7 \\ 2x - 3y = -21 \end{cases}$

e.  $\begin{cases} y = 4x - 3 \\ y = -2x + 9 \end{cases}$

f.  $\begin{cases} 4x - 3y = 1 \\ y + 2x = 3 \end{cases}$

g.  $\begin{cases} x + y = 6 \\ x - y = 12 \end{cases}$

h.  $\begin{cases} 3x - y = 1 \\ 2x - 5y = 18 \end{cases}$

i.  $\begin{cases} y = 7x + 1 \\ 7x + 3y = 3 \end{cases}$

5. Frank's Specialty Coffees makes a house blend from two types of coffee beans, one selling for \$9.05 per pound, and the other selling for \$6.25 per pound. His house blend sells for \$7.37 per pound. If he is using 9 lb of the \$6.25/lb beans, how many pounds of the \$9.05/lb beans does he need to make his house blend?