

**EXTRA PRACTICE 20**  
**Solving Systems Of Linear Equations**  
**Use after Sections 8.2 and 8.3**

Name \_\_\_\_\_

Examples:

a) Solve using the substitution method:  $2x + 5y = 11$ ,  
 $x = y + 2$

Substitute  $y + 2$  for  $x$ .

$$2x + 5y = 11$$

$$2(y + 2) + 5y = 11$$

$$2y + 4 + 5y = 11$$

$$7y = 7$$

$$y = 1$$

Then substitute 1 for  $y$  and solve for  $x$ .

$$x = y + 2$$

$$x = 1 + 2$$

$$x = 3$$

The solution is  $(3, 1)$ .

b) Solve using the elimination method:  $3x - 2y = 16$ ,  
 $x + y = 2$

Multiply the second equation  
by 2 and then add.

$$3x - 2y = 16$$

$$2x + 2y = 4$$

$$\hline 5x = 20$$

$$x = 4$$

Then substitute 4 for  $x$  and solve for  $y$ .

$$3x - 2y = 16$$

$$3 \cdot 4 - 2y = 16$$

$$12 - 2y = 16$$

$$-2y = 4$$

$$y = -2$$

The solution is  $(4, -2)$ .

Solve.

1.  $x + y = 7$ ,  
 $y = x - 3$  \_\_\_\_\_

2.  $y = x + 1$ ,  
 $3x + y = 9$  \_\_\_\_\_

3.  $a + b = -4$ ,  
 $b = a - 6$  \_\_\_\_\_

4.  $x + 3y = -7$ ,  
 $y = 2x$  \_\_\_\_\_

5.  $y - 3x = -7$ ,  
 $2y - x = 6$  \_\_\_\_\_

6.  $r - 3s = 0$ ,  
 $2r + 4s = 10$  \_\_\_\_\_

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7.  $6x - y = 1,$   
 $6x - y = -3$  \_\_\_\_\_

8.  $3x = y + 5,$   
 $x + 2y = 4$  \_\_\_\_\_

9.  $y - 4x = -18,$   
 $2x + 3y = 2$  \_\_\_\_\_

10.  $a + b = 9,$   
 $a - b = 7$  \_\_\_\_\_

11.  $x - 2y = -5,$   
 $y - 2x = 10$  \_\_\_\_\_

12.  $6c + 5d = 9,$   
 $c - 5d = -16$  \_\_\_\_\_

13.  $r + 4s = 14,$   
 $r - s = 4$  \_\_\_\_\_

14.  $2a = 7b,$   
 $a + 3 = 5b$  \_\_\_\_\_

15.  $3x = 8y + 5,$   
 $x + 6y - 6 = 0$  \_\_\_\_\_

16.  $x - 3y = 5,$   
 $-2x + 6y = -10$  \_\_\_\_\_

17.  $3x - 2y = -17,$   
 $2x + 3y = -33$  \_\_\_\_\_

18.  $15x + 3y = 24,$   
 $3x - 0.5y = 9$  \_\_\_\_\_

19.  $x - \frac{2}{3}y = 19,$   
 $\frac{1}{3}x + y = -12$  \_\_\_\_\_

20.  $2x - \frac{1}{2}y = \frac{7}{6},$   
 $\frac{1}{3}x + 2y = -\frac{1}{2}$  \_\_\_\_\_