Extra Practice

Lesson 7-2

(pages 376–381)

Use substitution to solve each system of equations. If the system does *not* have exactly one solution, state whether it has *no* solutions or *infinitely many* solutions.

1. $y = x$
   $5x = 12y$ **(0, 0)**

2. $y = 7 - x$
   $2x - y = 8$ **(5, 2)**

3. $x = 5 - y$
   $3y = 3x + 1$ $\left(\frac{7}{3}, \frac{8}{3}\right)$

4. $3x + y = 6$
   $y + 2 = x$ **(2, 0)**

5. $x - 3y = 3$
   $2x + 9y = 11$ $\left(4, \frac{1}{3}\right)$

6. $3x = -18 + 2y$
   $x + 3y = 4$ $\left(-\frac{46}{11}, \frac{30}{11}\right)$

7. $x + 2y = 10$
   $-x + y = 2$ **(2, 4)**

8. $2x = 3 - y$
   $2y = 12 - x$ **(−2, 7)**

9. $6y - x = -36$
   $y = -3x$ $\left(\frac{36}{19}, -\frac{108}{19}\right)$

10. $\frac{3}{4}x + \frac{1}{3}y = 1$
    $x - y = 10$ **(4, −6)**

11. $x + 6y = 1$
    $3x - 10y = 31$ **(7, −1)**

12. $3x - 2y = 12$
    $\frac{3}{2}x - y = 3$ **no solution**

13. $2x + 3y = 5$
    $4x - 9y = 9$ $\left(\frac{12}{5}, \frac{1}{15}\right)$

14. $x = 4 - 8y$
    $3x + 24y = 12$ **infinitely many**

15. $3x - 2y = -3$
    $25x + 10y = 215$ **(5, 9)**