

**SOLVING LINEAR SYSTEMS** Solve the linear system using substitution.

3.  $x = 17 - 4y$  (5, 3)  
 $y = x - 2$

6.  $4x - 7y = 10$  (13, 6)  
 $y = x - 7$

4.  $y = 2x - 1$  (1, 1)  
 $2x + y = 3$

7.  $x = 16 - 4y$  (-4, 5)  
 $3x + 4y = 8$

5.  $x = y + 3$  (2, -1)  
 $x - y = 5$

8.  $-5x + 3y = 51$  (3, 22)  
 $y = 10x - 8$

p439

# 3-17 and 26-28

$$\begin{array}{l}
 x = 17 - 4y \\
 y = x - 2 \rightarrow y = (5) - 2 \\
 x = 17 - 4(x - 2) \\
 x = 17 - 4x + 8 \\
 x = 25 - 4x \\
 5x = 25 \\
 x = 5 \\
 (5, 3)
 \end{array}$$



16.  $20x - 30y = -50$   $(-1, 1)$   
 $x + 2y = 1$

$$x = -2y + 1$$

$$20(-2y + 1) - 30y = -50$$

$$-40y + 20 - 30y = -50$$

$$-70y + 20 = -50$$

$$-70y = -70$$

$$y = 1$$

$$x = -2(1) + 1$$

$$x = -2 + 1$$

$$x = -1$$

$$(-1, 1)$$

$$26. \frac{1}{2}x + \frac{1}{4}y = 5 \quad \left(\frac{5}{2}, 8\right)$$

$$x - \frac{1}{2}y = 1 \quad \left(\frac{11}{2}, 9\right)$$

$$27. x + \frac{1}{3}y = -2 \quad (0, -6)$$

$$-8x - \frac{2}{3}y = 4$$

$$28. \frac{3}{8}x + \frac{3}{4}y = 12 \quad (12, 10)$$

$$\frac{2}{3}x + \frac{1}{2}y = 13$$

(28)  $\frac{3}{8}x + \frac{3}{4}y = 12 \xrightarrow{\cdot 8} 3x + 6y = 96$

$\frac{2}{3}x + \frac{1}{2}y = 13 \xrightarrow{\cdot 6} 4x + 3y = 78$

$\rightarrow 3y = -4x + 78 \rightarrow y = -\frac{4}{3}x + 26$

$$3x + 6\left(-\frac{4}{3}x + 26\right) = 96$$

$$3x + -8x + 156 = 96$$

$$-5x + 156 = 96$$

$$-5x = -60$$

$$x = 12$$

$$y = -\frac{4}{3}x + 26$$

$$y = -\frac{4}{3}(12) + 26$$

$$y = -16 + 26$$

$$y = 10$$