



p. 508
#16

$$x - y = 3$$

$$x + y = -1$$

8.2 p. 511
517 exercises

ex 4 $x + 3y = -28$
 $y = -5x$

$y = -5x$
 $x = -5(2)$
 $x = -10$
 $(2, -10)$

$x + 3(-5x) = -28$
 $x - 15x = -28$
 $-14x = -28$
 $\frac{-14x}{-14} = \frac{-28}{-14}$
 $x = 2$

ex 6 $4x + 3y = -5$
 $x = y - 3$ \longrightarrow $x = y - 3$
 $x = 1 - 3$
 $x = -2$
 $4(y - 3) + 3y = -5$
 $4y - 12 + 3y = -5$
 $7y - 12 = -5$
 $7y = 7$
 $y = 1$
 $(-2, 1)$

ex 8

$$\begin{aligned} 2x - 5 &= -y \\ x + 3y &= 0 \\ &\quad -3y \quad -3y \\ x &= -3y \end{aligned}$$

$$\begin{aligned} 2(-3y) - 5 &= -y \\ -6y - 5 &= -y \\ -5 &= 5y \\ -1 &= y \end{aligned}$$

$$\begin{aligned} x &= -3y \\ x &= -3(-1) \\ x &= 3 \\ (3, -1) \end{aligned}$$

ex 12

$$\begin{aligned} 5x + 2y &= -15 \\ 2x - y &= -6 \\ &\quad +y \quad +6 \\ &\quad +6 \quad +y \\ 2x + 6 &= y \end{aligned}$$

$$\begin{aligned} 5x + 2(2x + 6) &= -15 \\ 5x + 4x + 12 &= -15 \\ 9x &= -27 \\ x &= -3 \end{aligned}$$

$$\begin{aligned} y &= 2x + 6 \\ y &= 2(-3) + 6 \\ y &= 0 \\ (-3, 0) \end{aligned}$$

ex 14 $4x - y = -3$

$$y = 4x + 3$$

$$4x - (4x + 3) = -3$$

$$4x - 4x - 3 = -3$$

$$-3 = -3$$

infinite
of solns.

$$\{(x, y) \mid y = 4x + 3\}$$

ex 18 $2x + 10y = 3$

$$x = 1 - 5y$$

$$2(1 - 5y) + 10y = 3$$

$$2 - \cancel{10y} + \cancel{10y} = 3$$

$$2 = 3$$

$$\emptyset \quad \{ \}$$

no soln.

$$\underline{2 \times 24} \cdot 6 \left(\frac{1}{6}x + \frac{1}{6}y \right) = 1 \cdot 6$$

$$\frac{1x}{-x} + \frac{1y}{-x} = \frac{6}{-x}$$

$$6 \left(-\frac{1}{2}x - \frac{1}{3}y \right) = (-5)6$$

$$-3x - 2y = -30$$

$$y = 6 - x$$

$$-3x - 2(6 - x) = -30$$

$$y = 6 - 18$$

$$-3x - 12 + 2x = -30$$

$$y = -12$$

$$-x - 12 = -30$$

$$(18, -12)$$

$$-x = -18$$

$$x = 18$$

$$\underline{2 \times 30} \cdot 10(.1x + .9y) = (-2) \cdot 10$$

$$10(.5x - .2y) = (4.1) \cdot 10$$

$$1x + 9y = -20 - 9y$$

$$x = -20 - 9y$$

$$5x - 2y = 41$$

$$x = -20 - 9(-3)$$

$$x = -20 + 27$$

$$x = 7$$

$$5(-20 - 9y) - 2y = 41$$

$$(7, -3)$$

$$-100 - 45y - 2y = 41$$

$$-47y = 141$$

$$y = -3$$