



ex 4

$$\begin{array}{r} x+y=10 \\ \text{add } x-y=-6 \\ \hline 2x=4 \end{array}$$

$$x=2$$

$$2+y=10 \quad (2, 8)$$

$$y=8$$

p. 518 p. 3

p. 522

$$\begin{array}{r} x+y=10 \\ \text{subtract } x-y=-6 \\ \hline 2y=16 \end{array}$$

$$y=8$$

$$\begin{array}{r} x+y=10 \\ \text{add } -x+y=6 \\ \hline 2y=16 \\ y=8 \end{array}$$

ex 8

$$\begin{array}{r} 5x-y=5 \\ -5x+2y=0 \end{array}$$

$$\begin{array}{r} 5x-y=5 \\ \text{add } -5x+2y=0 \\ \hline y=5 \end{array}$$

$$5x=5+5$$

$$5x=10$$

$$x=2$$

$$(2, 5)$$

ex 14

$$\begin{array}{r} 2x + y = 8 \quad \xrightarrow{\cdot 2} \quad 4x + 2y = 16 \\ 5x - 2y = -16 \quad \xrightarrow{\quad} \quad 5x - 2y = -16 \\ \hline 9x = 0 \\ x = 0 \end{array}$$

~~2 \cdot 0~~ + y = 8

(0, 8)

ex 20

$$\begin{array}{r} 2x + 3y = 21 \quad \xrightarrow{\cdot 2} \quad 4x + 6y = 42 \\ 5x - 2y = -14 \quad \xrightarrow{\cdot 3} \quad 15x - 6y = -42 \\ \hline 19x = 0 \\ x = 0 \end{array}$$

~~2 \cdot 0~~ + 3y = 21

y = 7

(0, 7)

ex 22

$$\begin{array}{r}
 4x + 5y = -16 \xrightarrow{\cdot 6} 24x + 30y = -96 \\
 5x - 6y = -20 \xrightarrow{\cdot 5} 25x - 30y = -100 \\
 \hline
 49x = -196 \\
 x = -4
 \end{array}$$

$$\begin{array}{l}
 4(-4) + 5y = -16 \\
 -16 + 5y = -16 \\
 5y = 0 \\
 y = 0
 \end{array}
 \quad (-4, 0)$$

$$\begin{array}{r}
 4x + 5y = -16 \xrightarrow{\cdot 5} 20x + 25y = -80 \\
 5x - 6y = -20 \xrightarrow{\cdot (-4)} -20x + 24y = 80 \\
 \hline
 49y = 0 \\
 y = 0
 \end{array}$$

$$\begin{array}{l}
 4x + 0 = -16 \\
 x = -4 \\
 (-4, 0)
 \end{array}$$

$$\begin{array}{l} \text{ex 24} \\ 6x - 2y = 24 \longrightarrow 6x - 2y = 24 \\ -3x + y = -12 \xrightarrow{\cdot 2} -6x + 2y = -24 \\ \hline 0 = 0 \end{array}$$

infinite # of solns.  
 $\{(x, y) \mid -3x + y = -12\}$

$$\begin{array}{l} \text{ex 26} \\ 3x - 5y = 1 \xrightarrow{\cdot (-2)} -6x + 10y = -2 \\ 6x - 10y = 4 \longrightarrow 6x - 10y = 4 \\ \hline 0 = 2 \end{array}$$

no soln.

ex 30

$$3x = 27 + 2y \rightarrow 3x - 2y = 27$$

$$x - \frac{7}{2}y = -25 \xrightarrow{\cdot 2} 2x - 7y = -50$$

$$\xrightarrow{\cdot 2} 6x - 4y = 54$$

$$\xrightarrow{\cdot (-3)} -6x + 21y = 150$$

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$$17y = 204$$

$$y = 12$$

$$3x = 27 + 2(12)$$

$$3x = 51$$

$$x = 17$$

$$(17, 12)$$

ex 34

$$.5x + 3.4y = 13 \xrightarrow{\cdot 10} 5x + 34y = 130$$

$$15x - 2.6y = -25 \xrightarrow{\cdot 10} 15x - 26y = -250$$

$$\xrightarrow{\cdot (-3)} -15x - 102y = -390$$

$$\rightarrow 15x - 26y = -250$$

$$-128y = -640$$

$$y = 5$$

$$.5x + 17 = 13$$

$$-17 \quad -17$$

$$(2) \cdot 5x = -4(2)$$

$$x = -8$$

$$(-8, 5)$$

$$(2) \frac{1}{2}x = -4(2)$$