

WARMUP

Solve

$$y = \underline{3x - 5}$$

$$3x + 7y = 85$$

$$3x + 7(3x - 5) = 85$$

$$\begin{array}{r} 3x + 21x - \cancel{35} = 85 \\ + \cancel{35} + 35 \end{array}$$

$$\frac{24x}{24} = \frac{120}{24}$$

$$x = 5$$

$$y = 3 \cdot 5 - 5$$

$$y = 15 - 5$$

$$y = 10$$

$$(5, 10)$$

Section 4.3 Elimination

$$\begin{array}{r} \text{ex: } x + y = 5 \\ x - y = 9 \end{array} \left. \vphantom{\begin{array}{r} x + y = 5 \\ x - y = 9 \end{array}} \right\} \text{Add}$$

$$\frac{2x}{2} = \frac{14}{2}$$

$$x = 7$$

$$\begin{array}{r} \cancel{7} + y = 5 \\ \cancel{-7} = -7 \\ \hline y = -2 \end{array}$$

$$(7, -2)$$

$$\text{ex: } 4(4x - y = 22) \Rightarrow 16x - 4y = 88$$

$$3x + 4y = 26$$

$$\frac{16x - 4y = 88}{3x + 4y = 26}$$

$$\frac{13x}{13} = \frac{114}{13}$$

$$(6, 2)$$

$$\begin{array}{r} \cancel{18} + 4y = 26 \\ -18 \\ \hline 4y = 8 \\ \cancel{4} \\ \hline y = 2 \end{array}$$

$$\begin{array}{l} \text{ex: } 3(4x + 5y = 3) \Rightarrow 12x + \cancel{15y} = 9 \\ 5(2x - 3y = 7) \Rightarrow 10x - \cancel{15y} = 35 \\ \hline \cancel{22x} = \frac{44}{22} \\ \hline \end{array}$$

$$(2, -1)$$

$$\begin{array}{r} x = 2 \\ 4 \cdot 2 + 5y = 3 \\ \cancel{8} + 5y = 3 \\ -8 \\ \hline 5y = -5 \\ y = -1 \end{array}$$

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