

Linear Combination

$$5x + y = 14$$

$$(x - 2y = 5)(-4) \quad \text{* add EQ's together}$$

$$4x + 3y = 9$$

$$+ -4x + 8y = -20$$

$$\underline{11y = -11}$$

$$y = -1$$

$$x - 2(-1) = 5$$

$$x + 2 = 5$$

$$\underline{-2}$$

$$x = 3$$

* equal & opposite
coeff. on one var.

$$(3, -1)$$

$$\begin{aligned} (2x + 3y = 16)(-3) \\ (3x - 7y = 1)(2) \end{aligned}$$

$$\begin{array}{r} -6x - 9y = -48 \\ + \quad 6x - 14y = 2 \\ \hline 0 = \frac{23y = -46}{= 23} \end{array}$$

$$y = 2$$

$(5, 2)$

$$2x + 3(2) = 16$$

$$\frac{2x}{2} + \frac{6}{2} = \frac{16}{2}$$

$$x + 3 = 8$$

$$x = 5$$

$$\begin{aligned} (3x + 2y = 4) \cdot 2 \\ (2x - 5y = -29) \cdot (-3) \end{aligned}$$

$$\begin{array}{r} 6x + 4y = 8 \\ -6x + 15y = +87 \\ \hline 19y = 95 \\ \hline 19 \end{array}$$

$$y = 5$$

$$x = -2$$

$$\boxed{(-2, 5)}$$

$$6x + 4(5) = 8$$

$$6x + 20 = 8$$

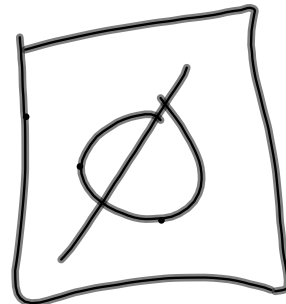
$$\begin{array}{r} 6x = -12 \\ \hline 6 \end{array}$$

your turn!

$$\begin{aligned}2x + 3y &= 13 \\ x - y &= 9\end{aligned}$$

$$\begin{aligned}(2x - y &= 7) \cdot 4 \\ (4x - 2y &= 9) \cdot (-2)\end{aligned}$$

$$\begin{array}{r}8x - 4y = 28 \\ + -8x + 4y = -18 \\ \hline 0 = 10\end{array}$$



your turn!

$$4x + 3y = 5$$

$$2x - 5y = -17$$