Sec 5.3

Solving by Elimination

Add or Subtract Equations to Eliminate a variable

Multiple all Terms of an Equation by a Constant and have an Equivalent Equation.

$$\begin{cases} -2x + 3y = 4 \\ 2x - y = -8 \end{cases}$$

(+)

$$2y = -4$$

$$y = -2$$

$$2x + 2 = -8$$

$$2x = -10$$

$$x = -5$$

$(-5, -2)$

$$\begin{cases} 2(-3x + 2y = -2) \\ -6x - 5y = 2 \end{cases}$$

$$6x + 4y = -4$$

(+) $-6x - 5y = 2$

$$-y = -2$$

$$y = 2$$

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

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

$3x + 4 = -2$

$3x = -6$

$x = -2$

$y = 2$

$(-2, 2)$

$$\begin{cases} 2(4x - 3y = 8) \\ -3(5x - 2y = -11) \end{cases}$$

$8x - 6y = 16$

$-15x + 6y = 33$

$-7x = 49$

$x = -7$

$5(-7) - 2y = -11$

$-35 - 2y = -11$

$-2y = 24$

$y = -12$

$(-7, -12)$

$$\begin{cases} 3x - 30 = y \\ 7y - 6 = 3x \end{cases}$$

$Ax + By = C$

$3x - y = 30$

$-3x + 7y = 6$

$6y = 36$

$y = 6$

$3x - 30 = 6$

$3x = 36$

$x = 12$

$(12, 6)$