

## Elimination Method (Mult/Add)

Recall from 1201;

$$\begin{array}{r}
 2x + 3y = 6 \\
 -2(x + 2y = 5)
 \end{array}
 \rightarrow
 \begin{array}{r}
 \cancel{2x} + 3y = 6 \\
 + \cancel{-2x} - 4y = -10
 \end{array}$$

$$\begin{array}{r}
 -y = -4 \\
 \textcircled{y = 4}
 \end{array}$$

$$\begin{array}{r}
 x + 2y = 5 \\
 x + 2(4) = 5 \\
 x + 8 = 5 \\
 \textcircled{x = -3}
 \end{array}$$

Solution  
 $(-3, 4)$

## Linear - Quadratic Example pg. 442

$$\begin{aligned} -2(5x - y = 10) \\ x^2 + x - 2y = 0 \end{aligned}$$

\* you have to eliminate the 'y'  
So only 'x' remains to solve.  
\*  $x^2$  cannot be eliminated

$$\begin{aligned} + \quad -10x + 2y = -20 \\ x^2 + x - 2y = 0 \end{aligned}$$


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$$x^2 - 9x = -20$$

$$x^2 - 9x + 20 = 0$$

$$(x-5)(x-4) = 0$$

$$\boxed{x=5} \quad \boxed{x=4}$$

$$5x - y = 10$$

$$5(5) - y = 10$$

$$-y = -15$$

$$y = 15$$

$$\text{pt. } (5, 15)$$

$$5(4) - y = 10$$

$$-y = -10$$

$$y = 10$$

$$\text{pt. } (4, 10)$$

Quadratic - Quadratic example

pg. 447

$$\begin{aligned} -1(3x^2 - x - y - 2 = 0) \\ 6x^2 + 4x - y = 4 \end{aligned}$$

$$\begin{aligned} -3x^2 + x + y + 2 &= 0 \\ + 6x^2 + 4x - y - 4 &= 0 \\ \hline 3x^2 + 5x - 2 &= 0 \end{aligned}$$

$$\begin{array}{l} \text{add } \Rightarrow +5 \\ \text{mult } \Rightarrow -6 \\ \hline 6 \quad -1 \end{array}$$

$$\begin{aligned} (3x^2 + 6x)(-x - 2) &= 0 \\ 3x(x+2) - 1(x+2) &= 0 \\ (3x-1)(x+2) &= 0 \\ x = \frac{1}{3} \quad x = -2 \end{aligned}$$

$$3x^2 - x - y - 2 = 0$$

$$3\left(\frac{1}{3}\right)^2 - \frac{1}{3} - y - 2 = 0$$

$$3\left(\frac{1}{9}\right) - \frac{1}{3} - y - 2 = 0$$

$$\frac{1}{3} - \frac{1}{3} - y - 2 = 0$$

$$-y = 2$$

$$y = -2$$

$$\text{pt } \left(\frac{1}{3}, -2\right)$$

$$3(-2)^2 - (-2) - y - 2 = 0$$

$$12 + 2 - y - 2 = 0$$

$$-y = -12$$

$$y = 12$$

$$\text{pt } (-2, 12)$$

Practice pg. 451

# 3 d, e

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