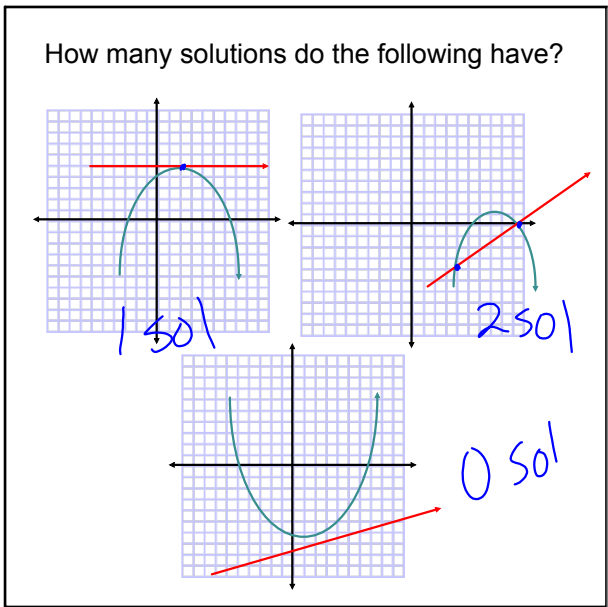


Lesson 9-8  
Systems of Linear and  
Quadratic Equations



- We can solve systems in 3 ways:
1. graphing
  2. substitution  
*Solve for a variable & sub. in to the other*
  3. elimination  
*• Used mult. to cancel one variable out*

Solve by using elimination:

$$\begin{array}{r}
 y = x^2 - x - 2 \\
 -(y = -x + 2) \\
 \hline
 -y = x - 2 \\
 + y = x^2 - x - 2 \\
 \hline
 0 = x^2 - 4 \\
 +4 \qquad +4 \\
 \hline
 4 = x^2 \\
 \sqrt{4} = \sqrt{x^2} \\
 \pm 2 = x
 \end{array}$$

*elim. y*

(2, 0)  
(-2, 4)

Practice:

Solve using Elimination:

$$\begin{array}{r}
 y = x^2 - 4x + 2 \\
 -(y = -x) \\
 \hline
 -y = x \\
 + y = x^2 - 4x + 2 \\
 \hline
 0 = x^2 - 3x + 2 \\
 0 = (x-1)(x-2) \\
 x = 1, 2
 \end{array}$$

(1, -1)  
(2, -2)

We can also use substitution:

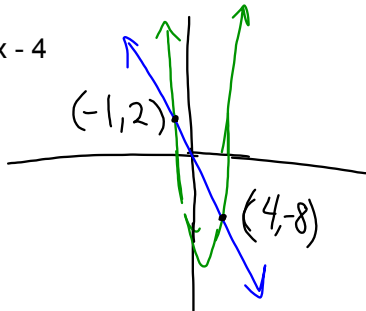
Solve:

$$\begin{array}{r}
 y = 12x + 30 \\
 y - 30 = 12x \\
 y = x^2 + 11x - 12 \\
 \hline
 x^2 + 11x - 12 - 30 = 12x \\
 x^2 + 11x - 42 = 12x \\
 -12x \qquad -12x \\
 \hline
 x^2 - x - 42 = 0 \\
 (x+6)(x-7) = 0 \\
 x = -6, 7
 \end{array}$$

(-6, -42)  
(7, 114)

Solve by graphing:

$$\begin{cases} y = x^2 - 5x - 4 \\ y = -2x \end{cases}$$



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#14, 16, 18, 20, 22, 34, 36