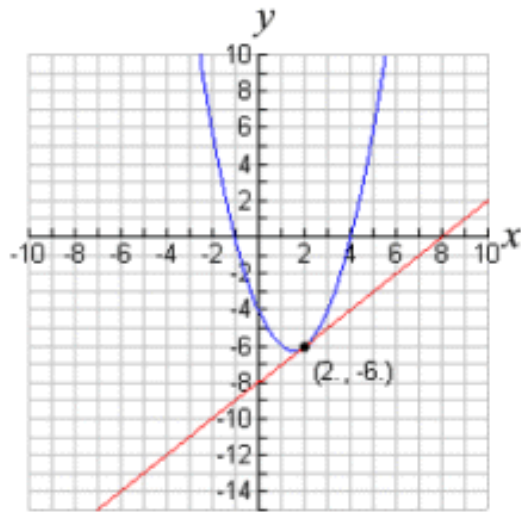
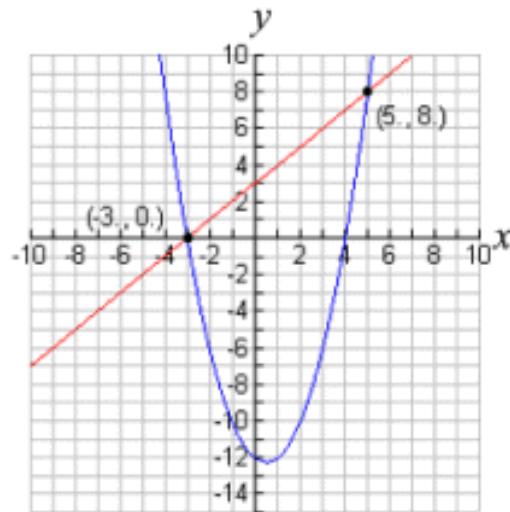


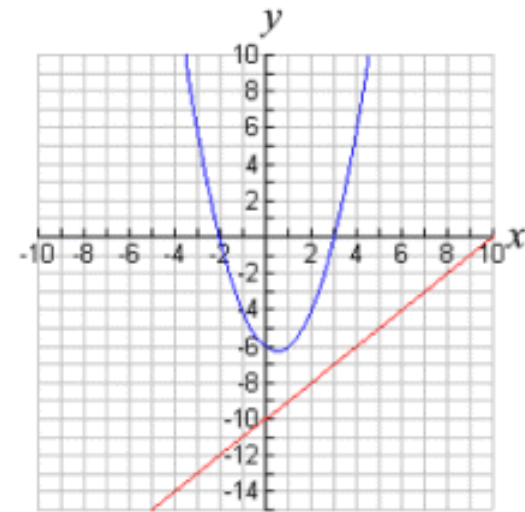
Systems of Linear-Quadratic Equations



One Solution



Two Solutions



No Solution

Steps for Solving Systems of Linear-Quadratic Equations (Algebraically):

1. Set the functions equal to each other.
2. Solve for x.
3. Plug in the value(s) for x & solve for y.

$$f(x) = x - 8$$

$$g(x) = x^2 - 3x - 4$$

$$x - 8 = x^2 - 3x - 4$$

$$\begin{array}{r} -x \qquad -x \\ -8 = x^2 - 4x - 4 \\ +8 \qquad +8 \\ \hline 0 = x^2 - 4x + 4 \\ 0 = (x - 2)(x - 2) \\ x = 2 \end{array}$$

$$(2) - 8 = -6$$

(2, -6)

$$f(x) = x + 3$$

$$g(x) = x^2 - x - 12$$

$$x + 3 = x^2 - x - 12$$

$$\begin{array}{r} -x \qquad -x \\ 3 = x^2 - 2x - 12 \\ -3 \qquad -3 \\ \hline 0 = x^2 - 2x - 15 \\ 0 = (x - 5)(x + 3) \\ x = 5 \quad x = -3 \end{array}$$

$$(5) + 3 = 8 \qquad (-3) + 3 = 8$$

(5, 8) \qquad (5, 0)

$$f(x) = x - 10$$

$$g(x) = x^2 - x - 6$$

$$x - 10 = x^2 - x - 6$$

$$\begin{array}{r} -x \qquad -x \\ -10 = x^2 - 2x - 6 \\ +10 \qquad +10 \\ \hline 0 = x^2 - 2x + 4 \end{array}$$

no real solution