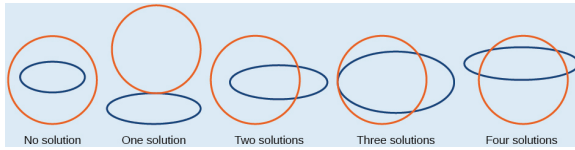


Conic Systems of Equations

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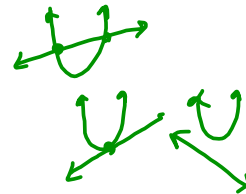


Algebraic methods:

1. Substitution & 2. Elimination (or Combination)

1. $y = x^2$
 $y = 3x - 2$

Substitution Method



1. Choose 1 eq. to solve for 1 variable

$$y = x^2$$

2. Substitute that eq. from step 1 into the other equation for the variable & solve

$$y = 3x - 2$$

$$x^2 = 3x - 2$$

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

$$(x - 2)(x - 1) = 0$$

$$x - 2 = 0 \quad x - 1 = 0$$

$$x = 2 \quad x = 1$$

3. Substitute what you just found in step 2 into the eq. above (from step 1)

$$y = x^2$$

$$y = (2)^2$$

$$y = 4$$

$$y = x^2$$

$$y = (1)^2$$

$$y = 1$$

4. Write as an ordered pair & check in both original equations.

$(2, 4)$ & $(1, 1)$

$y = x^2$	$y = 3x - 2$	$y = x^2$	$y = 3x - 2$
$4 = (2)^2$	$4 = 3(2) - 2$	$1 = (1)^2$	$1 = 3(1) - 2$
$4 = 4$ ✓	$4 = 6 - 2$	$1 = 1$ ✓	$1 = 3 - 2$
	$4 = 4$ ✓		$1 = 1$ ✓

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

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

$$y = 2x + 3$$

$$x^2 - y = 0$$

$$x^2 - (2x + 3) = 0$$

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

$$(x - 3)(x + 1) = 0$$

$$x - 3 = 0 \quad x + 1 = 0$$

$$x = 3 \quad x = -1$$

$y = 2x + 3$	$y = 2x + 3$
$y = 2(3) + 3$	$y = 2(-1) + 3$
$y = 6 + 3$	$y = -2 + 3$
$y = 9$	$y = 1$

$(3, 9)$ & $(-1, 1)$

$9 - 2(3) - 3 = 0$ ✓	$1 - 2(-1) - 3 = 0$ ✓
$(3)^2 - 9 = 0$ ✓	$(-1)^2 - 1 = 0$ ✓