

Name

9.7 Solve Systems With Quadratic Equations

Alg I

I can solve systems that include a quadratic equation.

Example 1/2:

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

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

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

$$0 = 2(x-3)(x+1)$$

$$\begin{array}{l|l} x-3=0 & x+1=0 \\ +3+3 & -1-1 \\ \hline x=3 & x=-1 \end{array}$$

$(3, 7)$

$(-1, 3)$

$x=3$

$x=-1$

Ch 9 Quiz

$$\begin{aligned} y &= x+4 \\ y &= 3+4 \\ y &= 7 \end{aligned}$$

$$\begin{aligned} y &= x+4 \\ y &= -1+4 \\ y &= 3 \end{aligned}$$

$$x+1 = -x^2+6x+1$$

$$\begin{aligned} -x-1 & \quad -x-1 \\ \hline 0 &= -x^2+5x \end{aligned}$$

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

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

$$x=0 \quad x-5=0$$

$$\begin{array}{l} +5 \quad +5 \\ \hline x=+5 \end{array}$$

$x=+5$

$$\begin{aligned} y &= x+1 \\ y &= 0+1 \\ y &= 1 \end{aligned}$$

$(0, 1)$

$$\begin{aligned} y &= x+1 \\ y &= +5+1 \\ y &= 6 \end{aligned}$$

$(+5, 6)$

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Alg I

Solve Systems With Quadratic Equations

I can solve systems that include a quadratic equation.

$$3) \begin{cases} y = x^2 - 6x + 11 \\ y = x + 1 \end{cases}$$

$$\begin{aligned} x^2 - 6x + 11 &= x + 1 \\ -x \quad -1 & \quad -x \quad -1 \\ \hline x^2 - 7x + 10 &= 0 \end{aligned}$$

$y = x + 1$

$y = x + 1$

$(x - 5)(x - 2) = 0$

$y = 5 + 1$

$y = 2 + 1$

$x - 5 = 0$

$x - 2 = 0$

$y = 6$

$y = 3$

$+5 \quad +5$

$+2 \quad +2$

$(5, 6)$

$(2, 3)$

$x = 5$

$x = 2$

Ch. 9 Quiz

Example 3:

$$4) \begin{cases} x + 3 = 2x^2 + 3x - 1 \\ -x - 3 \end{cases}$$

$$\begin{cases} y = x + 3 \\ y = 2x^2 + 3x - 1 \end{cases}$$

$0 = 2x^2 + 2x - 4$

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

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

$x + 2 = 0$

$x - 1 = 0$

$-2 \quad -2$

$+1 \quad +1$

$x = -2$

$x = 1$

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Solve Systems With

Quadratic Equations

Alg I

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Ch. 9 Quiz

Complete Skills Practice, pgs. 225, #

$$\begin{array}{r}
 5) \quad x^2 + 7x + 4 = 2x + 4 \\
 \quad \quad -2x - 4 \quad -2x - 4 \\
 \hline
 \end{array}$$

$$\begin{array}{l}
 y = x^2 + 7x + 4 \\
 y = 2x + 4
 \end{array}$$

$$x^2 + 5x = 0$$

$$x(x+5) = 0$$

$$\begin{array}{l|l}
 x = 0 & x + 5 = 0 \\
 & \quad -5 \quad -5 \\
 \hline
 \end{array}$$

$$x = -5$$

$$\begin{array}{r}
 6) \quad 8 = x^2 - 4x + 3 \\
 \quad \quad -8 \quad \quad \quad -8 \\
 \hline
 \end{array}$$

$$\begin{array}{l}
 y = 8 \\
 y = x^2 - 4x + 3
 \end{array}$$

$$0 = x^2 - 4x - 5$$

$$0 = (x-5)(x+1)$$

$$\begin{array}{l|l}
 x - 5 = 0 & x + 1 = 0 \\
 \quad +5 \quad +5 & \quad -1 \quad -1 \\
 \hline
 \end{array}$$

$$x = 5$$

$$x = -1$$

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Coordinate Geometry

$$y = x^2 + 1$$

$$y = 3x^2$$

$$y = x^2 + 1$$

$$y = 3x^2$$

$$0 = x^2 + 1 - 3x^2$$

$$0 = -2x^2 + 1$$

$$0 = 2x^2 - 1$$

$$2x^2 = 1$$

$$x^2 = \frac{1}{2}$$

$$x = \pm \frac{1}{\sqrt{2}}$$

$$y = 8$$

$$y = x^2 - 4x + 8$$

$$y = 8$$

$$y = x^2 - 4x + 8$$

$$0 = x^2 - 4x + 8 - 8$$

$$0 = x^2 - 4x$$

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

$$x = 0 \text{ or } x = 4$$