

The Quadratic Formula



Overview of problems



Example Set: A

Write the equations in standard form. Assign the variables a , b , c with the values used in the quadratic formula

$$3x^2 + 6x - 10 = 0$$

$$-4x - 2x^2 + 1 = 0$$

$$7x^2 = 5x - 8$$

$$y^2 = 1 + 3y$$

$$4t - t^2 = 0$$



Example Set: B

Solve using the quadratic formula

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

$$y^2 - 5y + 5 = 0$$



Example Set: C

Solve the quadratic equations

$$5x^2 + 30x + 40 = 0$$

$$6t^2 = 30$$

$$9q^2 + 3q - 2 = 0$$

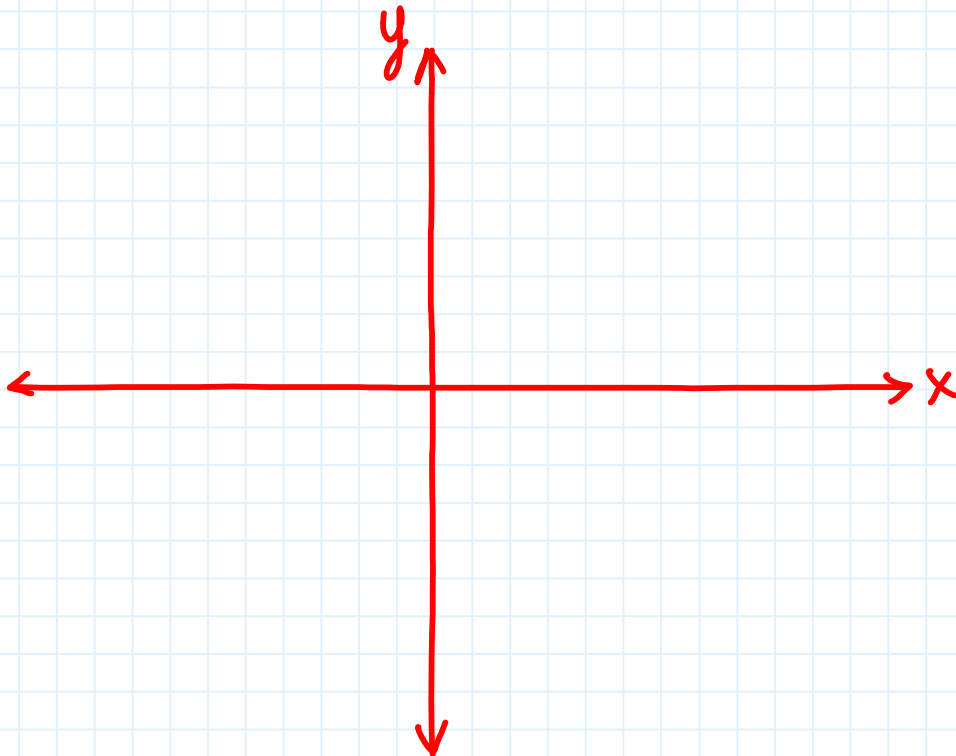
$$(x-2)^2 - 16 = 0$$



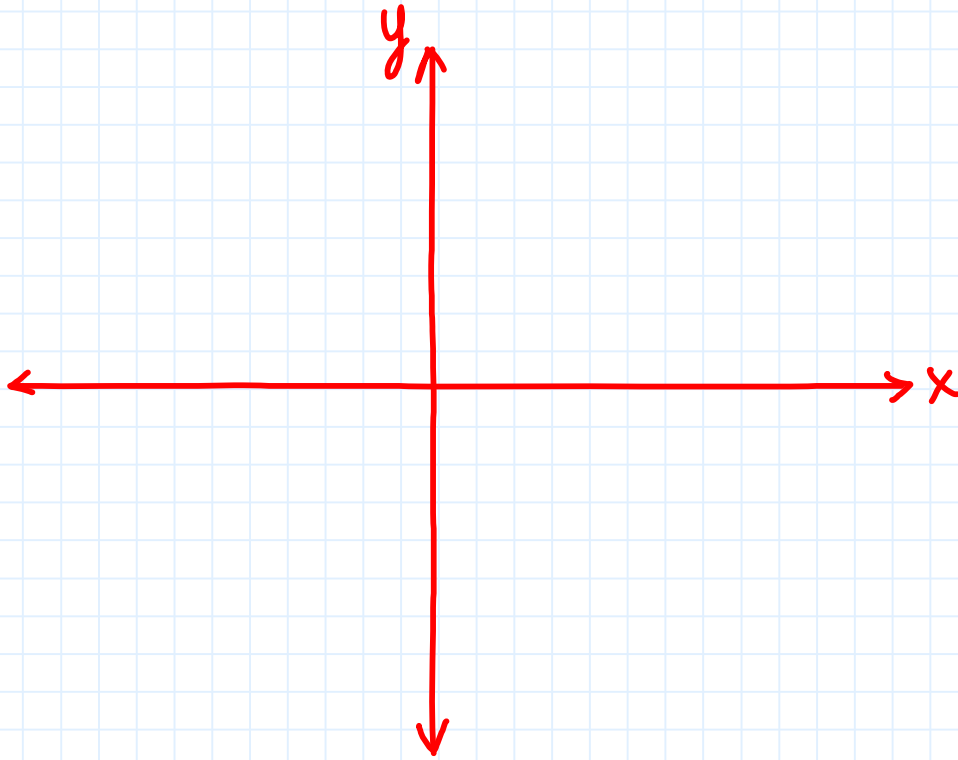
Example Set: D

Graph the quadratic equations. Label the vertex, x-intercepts and y-intercepts.

$$y = 3x^2 - 18x + 24$$



$$y = x^2 + x - \frac{3}{4}$$





Example Set: E

Solve using the quadratic formula

$$18.02x - 3.96x^2 = -4.71x^2 - 1.3$$

The Quadratic Formula



Overview of problems- KEY



Example Set: A

Write the equations in standard form. Assign the variables a , b , c with the values used in the quadratic formula

$$3x^2 + 6x - 10 = 0$$

$$a=3 \quad b=6 \quad c=-10$$

$$3x^2 + 6x - 10 = 0$$

$$-4x - 2x^2 + 1 = 0$$

$$a=-2 \quad b=-4 \quad c=1$$

$$-2x^2 - 4x + 1 = 0$$

$$7x^2 = 5x - 8$$

$$a=7 \quad b=-5 \quad c=8$$

$$7x^2 - 5x + 8 = 0$$

$$y^2 = 1 + 3y$$

$$a=1 \quad b=-3 \quad c=-1$$

$$y^2 - 3y - 1 = 0$$

$$4t - t^2 = 0$$

$$a=-1 \quad b=4 \quad c=0$$

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



Example Set: B

Solve using the quadratic formula

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

$$x_1 = 3 \quad x_2 = -1$$

$$y^2 - 5y + 5 = 0$$

$$y = \frac{5 \pm \sqrt{5}}{2}$$



Example Set: C

Solve the quadratic equations

$$5x^2 + 30x + 40 = 0$$

$$x_1 = -2 \quad x_2 = -4$$

$$6t^2 = 30$$

$$t = \pm \sqrt{5}$$

$$9q^2 + 3q - 2 = 0$$

$$q_1 = \frac{1}{3} \quad q_2 = -\frac{2}{3}$$

$$(x-2)^2 - 16 = 0$$

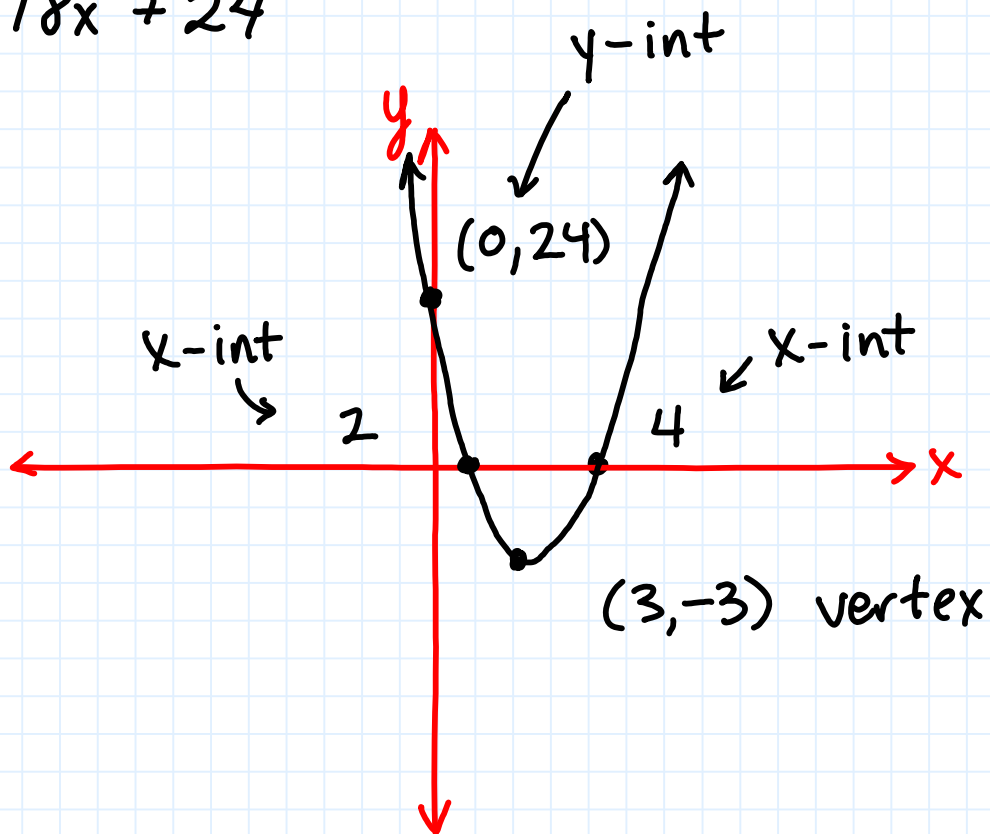
$$x_1 = 6 \quad x_2 = -2$$



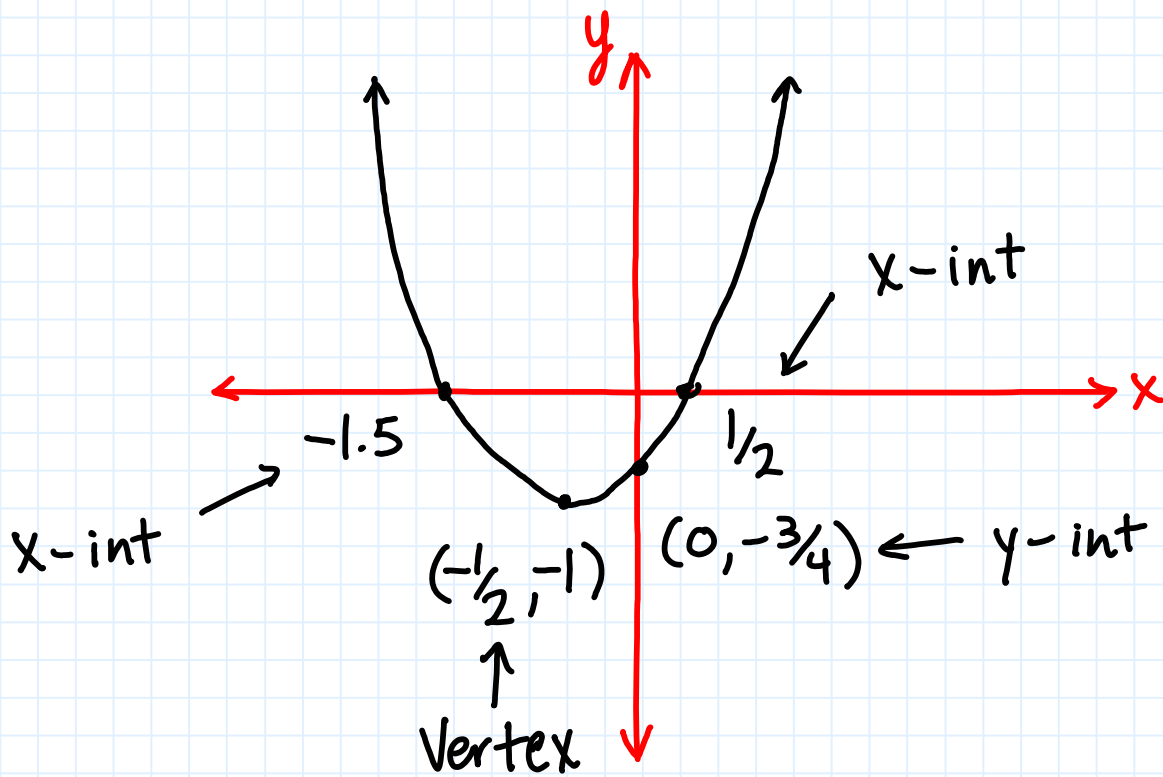
Example Set: D

Graph the quadratic equations. Label the vertex, x-intercepts and y-intercepts.

$$y = 3x^2 - 18x + 24$$



$$y = x^2 + x - \frac{3}{4}$$





Example Set: E

Solve using the quadratic formula

$$18.02x - 3.96x^2 = -4.71x^2 - 1.3$$

$$x_1 = -0.07\bar{3} \quad x_2 = -23.95\bar{3}$$