

Graphing Quadratic Equations



Overview of problems



Example Set: A

Determine if the parabola opens up or down

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

$$y = -x^2 + 3x + 10$$

$$y - 2x^2 + 6x = -12$$

$$-y = x^2 - 5$$



Example Set: B

Find the vertex and axis of symmetry

$$y = x^2 - 10x + 7$$

$$y = -2x^2 + 8x - 3$$

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

$$y = -5x^2 + 30x - 20$$

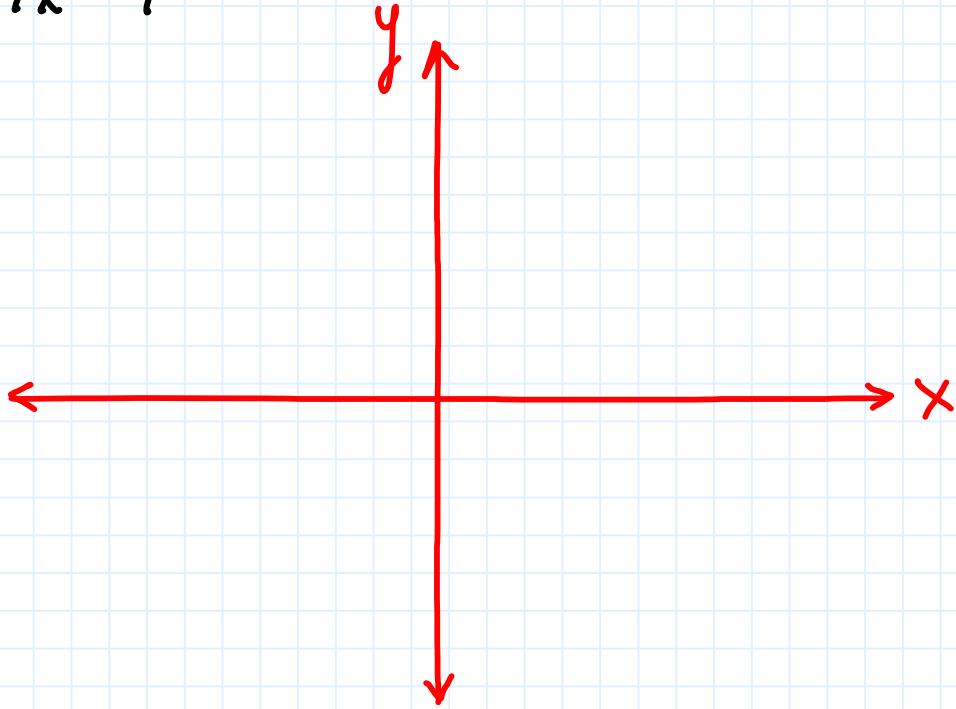
$$y = \frac{1}{2}x^2 - 2x + 1$$



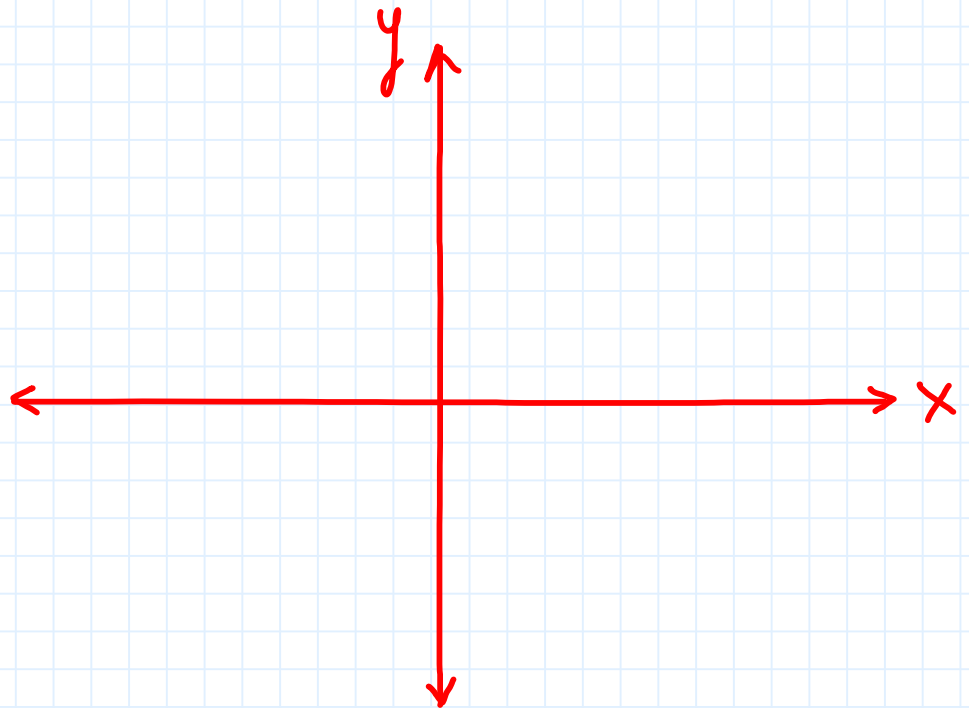
Example Set: C

Graph the quadratic equations, label the vertex and axis of symmetry

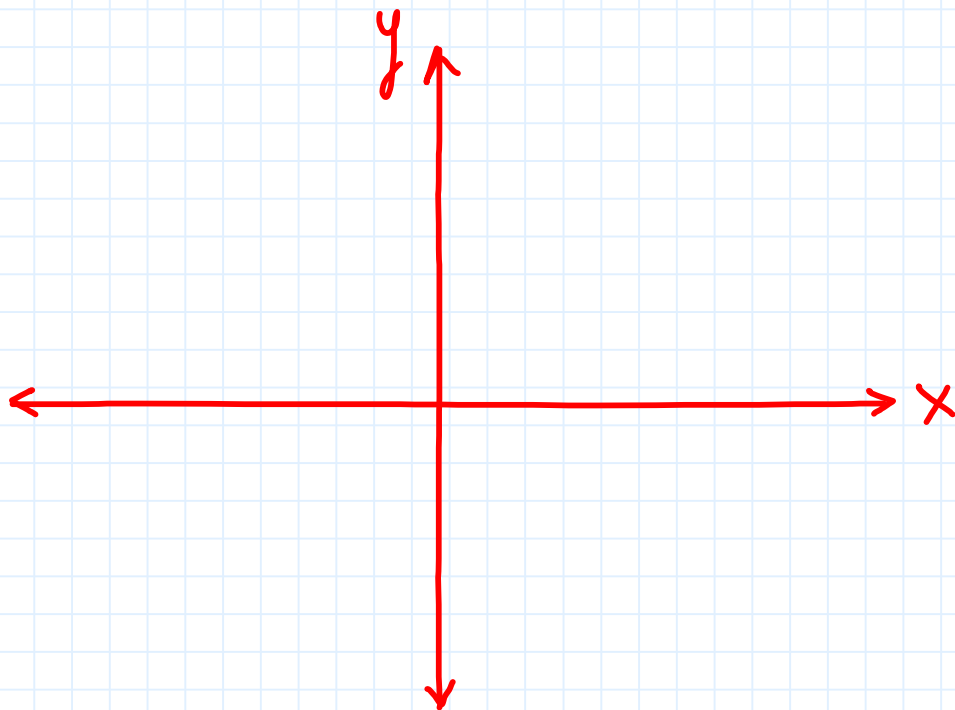
$$y = x^2 + 4x - 7$$



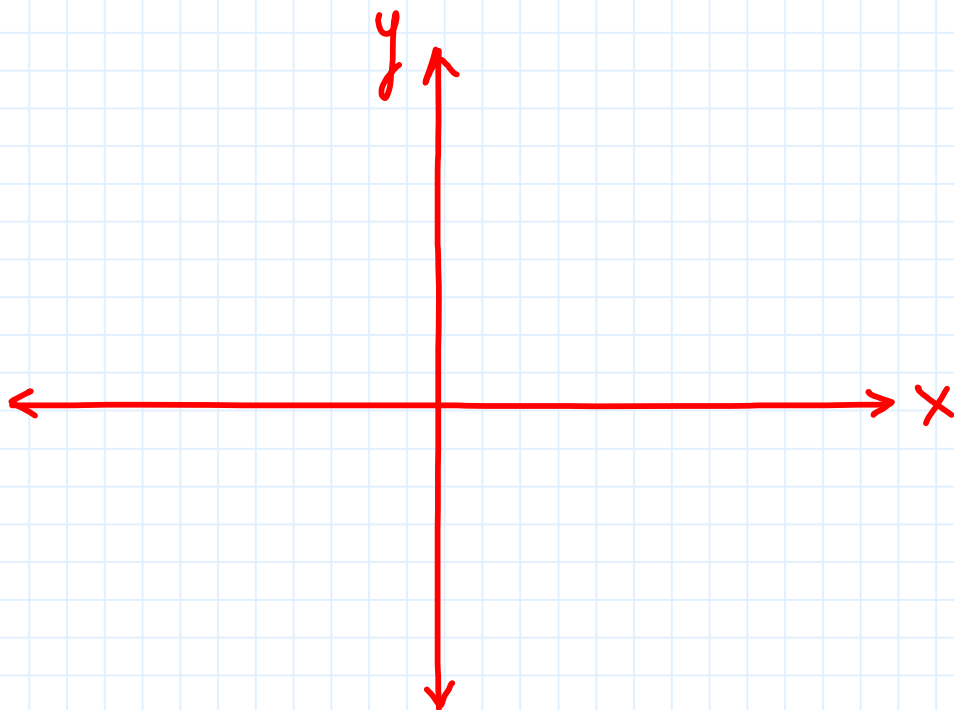
$$y = 5x^2 + 20x - 3$$



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



$$y = \frac{1}{2}x^2 - x + 5$$



Graphing Quadratic Equations



Overview of problems- KEY



Example Set: A

Determine if the parabola opens up or down

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

up

$$y = -x^2 + 3x + 10$$

down

$$y - 2x^2 + 6x = -12$$

up

$$-y = x^2 - 5$$

down



Example Set: B

Find the vertex and axis of symmetry

$$y = x^2 - 10x + 7 \quad x = 5 \quad (5, -18)$$

$$y = -2x^2 + 8x - 3 \quad x = 2 \quad (2, 5)$$

$$y = 3x^2 - 12x \quad x = 2 \quad (2, -12)$$

$$y = -5x^2 + 30x - 20 \quad x = 3 \quad (3, 25)$$

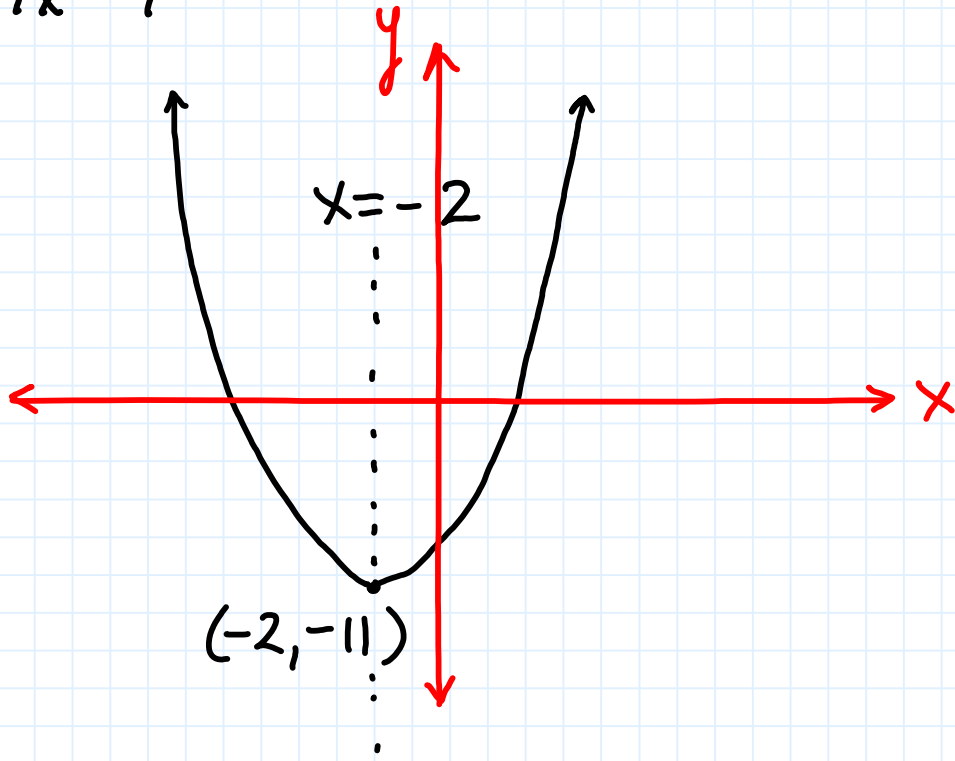
$$y = \frac{1}{2}x^2 - 2x + 1 \quad x = 2 \quad (2, -1)$$



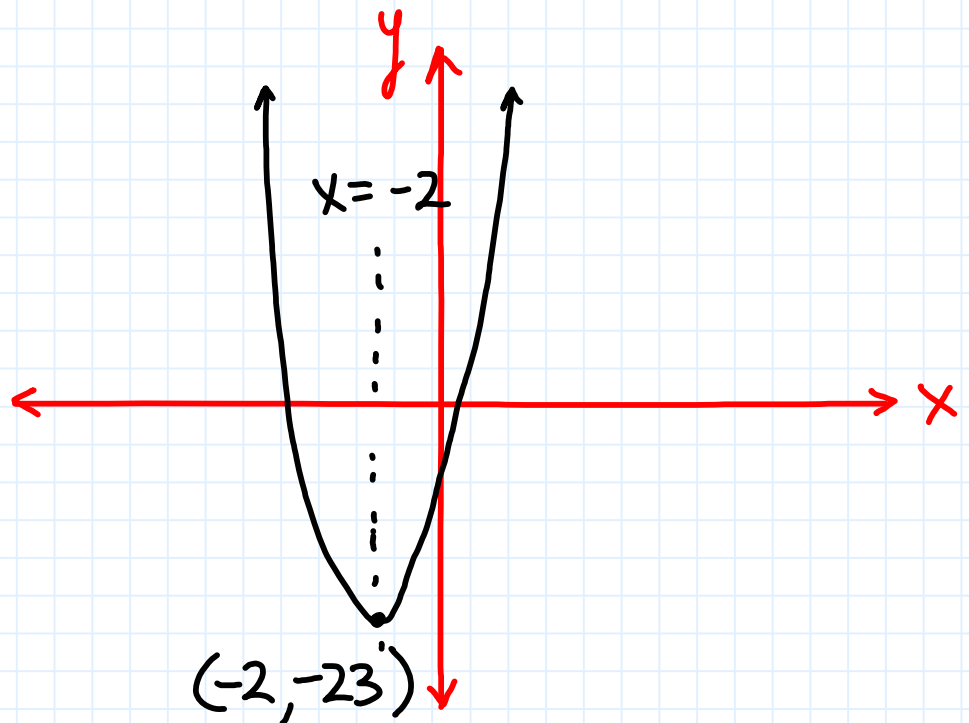
Example Set: C

Graph the quadratic equations, label the vertex and axis of symmetry

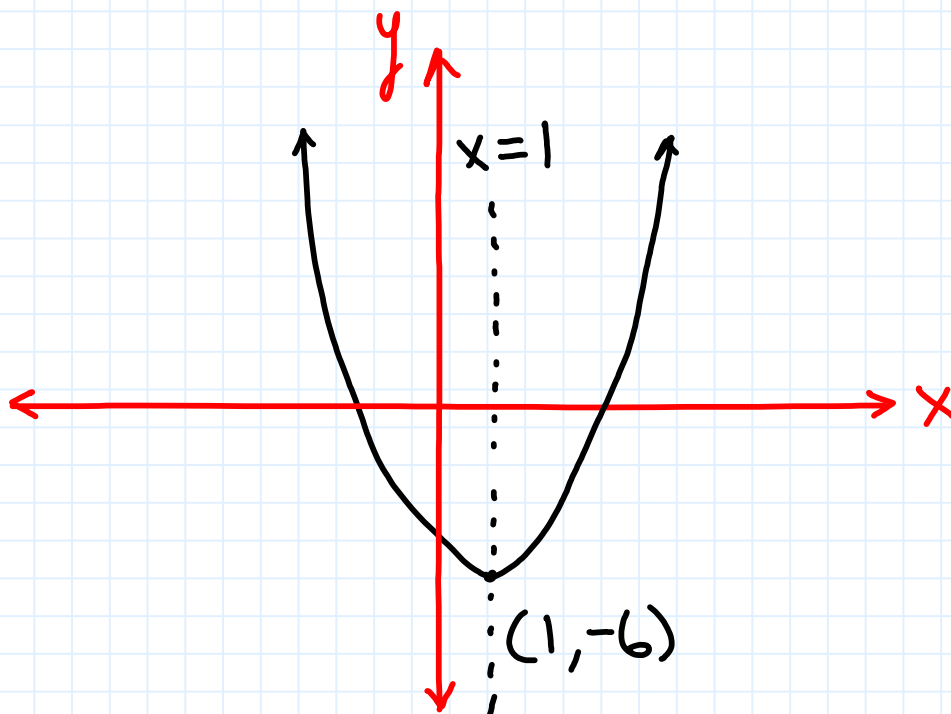
$$y = x^2 + 4x - 7$$



$$y = 5x^2 + 20x - 3$$



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



$$y = \frac{1}{2}x^2 - x + 5$$

