

What you will learn about:
Graphing in Vertex form

Vertex Form

$$y = a(x - h)^2 + k$$

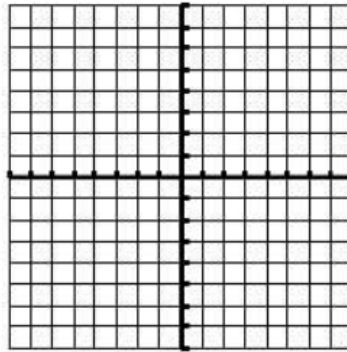
$$y = (x - 1)^2 + 2$$

Vertex: _____

Axis of Symmetry _____

Maximum or Minimum?

y-Intercept _____



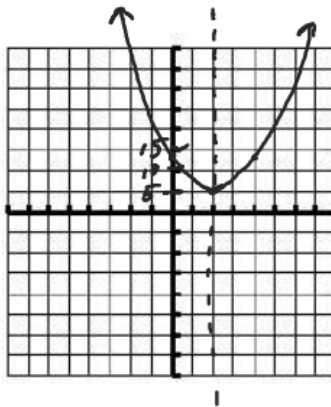
$$y = 2(x - 2)^2 + 5$$

Vertex: (2, 5)

Axis of Symmetry x = 2

Maximum or Minimum?

y-Intercept (0, 13)



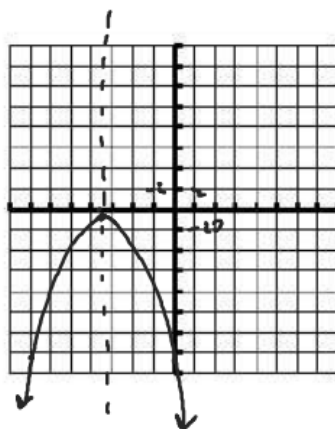
$$y = -3(x+7)^2 - 8$$

Vertex: $(-7, -8)$

Axis of Symmetry $x = -7$

Maximum or Minimum?

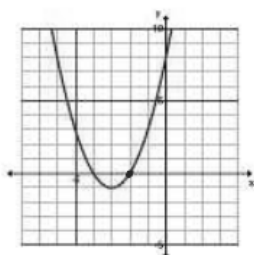
y-Intercept $(0, -155)$



Write the equation of each parabola in vertex form.

$$y = a(x-h)^2 + k$$

- 1) Find Vertex
- 2) Pick point on Curve
- 3) Plug vertex in for h, k
Plug point in x, y
- 4) Solve for a
- 5) Rewrite equation with a, h, k



$(-3, -1)$ $(-2, 0)$
 h, k x, y

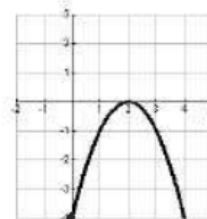
$$y = a(x-h)^2 + k$$

$$0 = a(-2+3)^2 - 1$$

$$1 = a(-2+3)^2$$

$$1 = a$$

$$y = (x+3)^2 - 1$$



$v(2, 0)$ $(0, -4)$
 h, k x, y

$$y = a(x-h)^2 + k$$

$$-4 = a(0-2)^2 + 0$$

$$\frac{-4}{4} = \frac{4a}{4}$$

$$-1 = a$$

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

