

$$y = ax^2$$

If a is negative:

Up-side down

If $|a| < 1$: Wider

If $|a| > 1$: Narrow

Standard Form:

$$y = ax^2 + bx + c$$

x-coordinate →

Vertex:
 $x = -b/2a$

**Then plug that
back into
equation
to find the
y-coordinate*

Axis of symmetry:

$$x = -b/2a$$



Ex: Name the vertex and aos and graph the parabola. Include at least 5 points.

$$Y = 2x^2 - 8x + 6$$

$$X = \frac{-(-8)}{2(2)} = \frac{8}{4} = 2$$

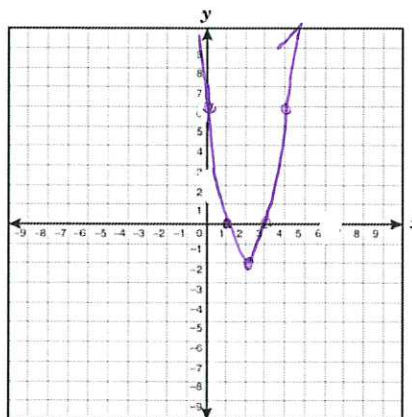
$$Y = 2(2^2) - 8(2) + 6$$

$$Y = -2$$

$$V = (2, -2)$$

$$\text{AOS} = 2$$

X	Y
2	-2
1	0
3	0
0	6
4	6



Ex: Name the vertex and aos and graph the parabola. Include at least 5 points.

$$Y = -x^2 + x + 12$$

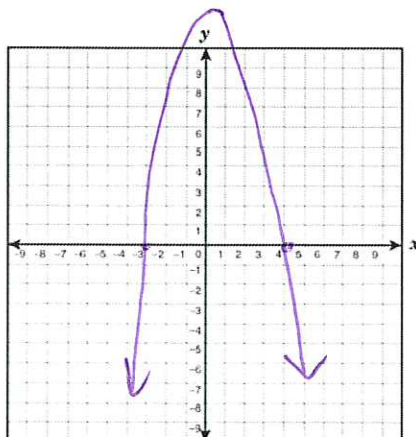
$$X = \frac{-1}{2(-1)} = .5$$

$$Y = -.5^2 + .5 + 12$$

$$Y = 12.25$$

$$\text{AOS} = .5$$

$$V = (.5, 12.25)$$



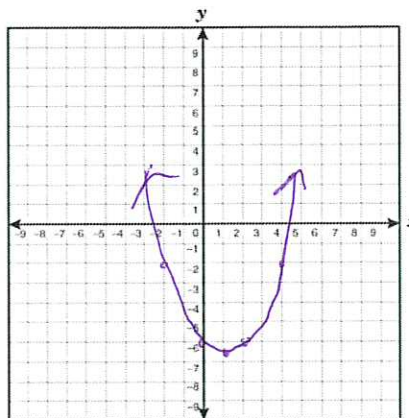
Ex: Name the vertex and aos and graph the parabola. Include at least 5 points.

$$Y = \frac{1}{2}x^2 - x - 6$$

$$x = \frac{-(-1)}{2(\frac{1}{2})} = 1$$

vertex →

X	Y
1	-6.5
0	-6
2	-6
-2	-2
4	-2



Ex: Name the vertex and aos and graph the parabola. Include at least 5 points.

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

$$x^2 + 3x - x - 3$$

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

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

$$y = -4$$

vertex →

X	Y
-1	-4
-2	-3
0	-3

