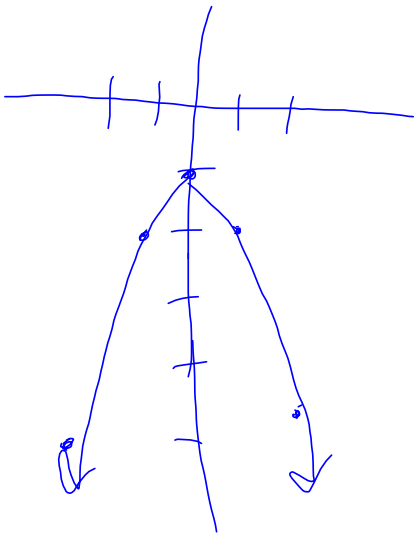
Homework Questions

17) $f(x) = -x^2 - 1$

-2	$-(-2)^2 - 1$	-5
-1	$-(-1)^2 - 1$	-2
0		-1
1		-2
2		-5



Homework Quiz

Make a table and graph the following function.

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

You have graphed the functions:

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

a: vertical stretch $a > 1$

horizontal stretch $0 < a < 1$

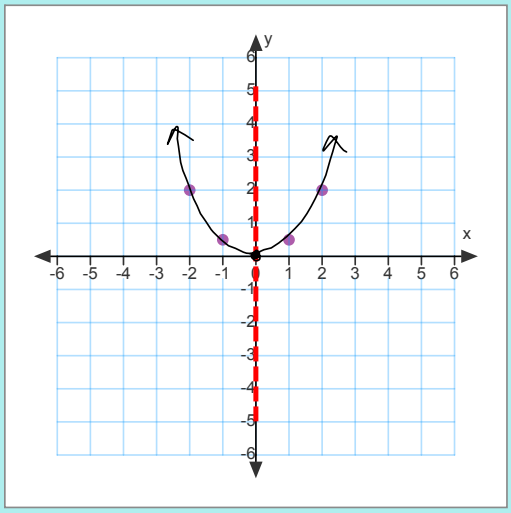
c: ↑↓

How would we graph the function: $y = ax^2 + bx + c$

The b value is going to effect the axis of symmetry.

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

"is there a b value?"



Axis of Symmetry:

$x = 0$

The equation for the axis of symmetry

$$AOS = -\frac{b}{2a}$$

Graph the function: $y = x^2 + 6x + 9$

$ax^2 + bx + c$

Step 1: Find the equation of the axis of symmetry.

$b = 6, \; a = 1$

$$AOS = -\frac{b}{2a}$$

$$AOS = -\frac{6}{2(1)}$$

$$AOS = -\frac{6}{2}$$

$$AOS = -3$$

$$\boxed{x = -3}$$

Graph the function: $y = x^2 + 6x + 9$

Step 2: Find the vertex by plugging in the AOS.

$$y = (-3)^2 + 6(-3) + 9$$

$$y = 9 - 18 + 9$$

$$y = 0$$

$$\boxed{vertex : (-3, 0)}$$

Graph the function: $y = x^2 + 6x + 9$

Step 3: Find two other points on the graph.

The first should be the y-intercept

The y-intercept is when $x =$ ◯

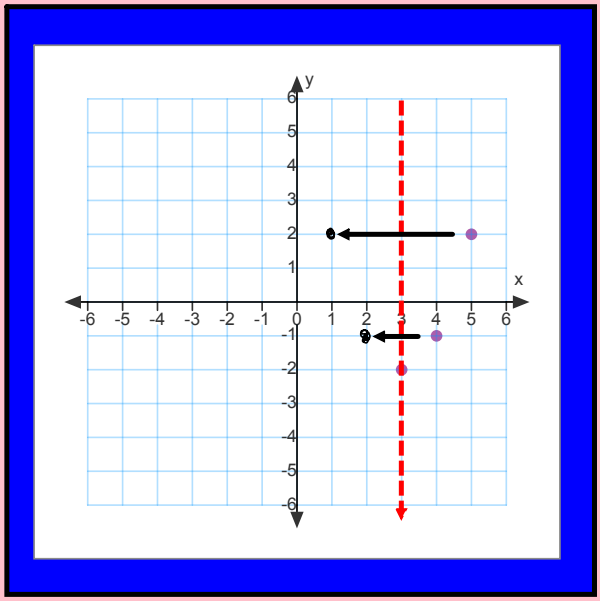
$$y = (0)^2 + 6(0) + 9$$

$$y = 0 + 9$$

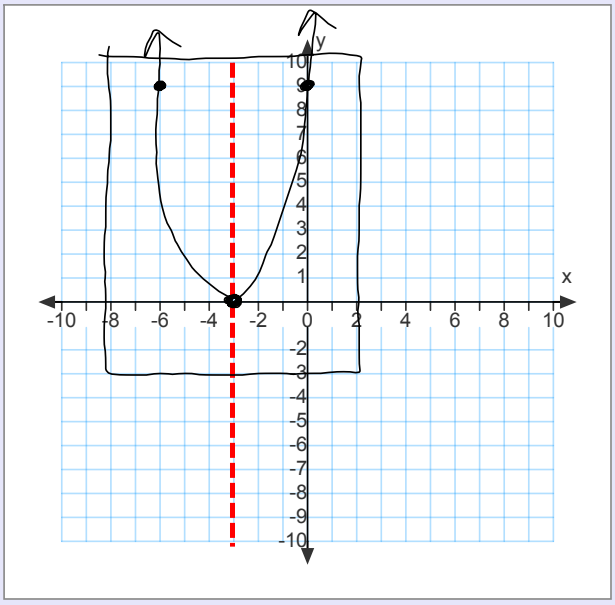
$$y = 9$$

$$\boxed{(0, 9)}$$

The last point you will find will be a reflection over the axis of symmetry



(-6, 9)



Homework!

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13,23-31 odd