Bell Work

1. What is the vertex of the quadratic function to the right?

$$f(x) = -(x+4)^2 - 1$$

2. What is the axis of symmetry of the quadratic function to the right?

3. What is the transformation of the quadratic function to the right?

4. What is the quadratic graphing table?

Transformations on Parabolas

$$f(x) = 2(x+4)^2 - 7$$

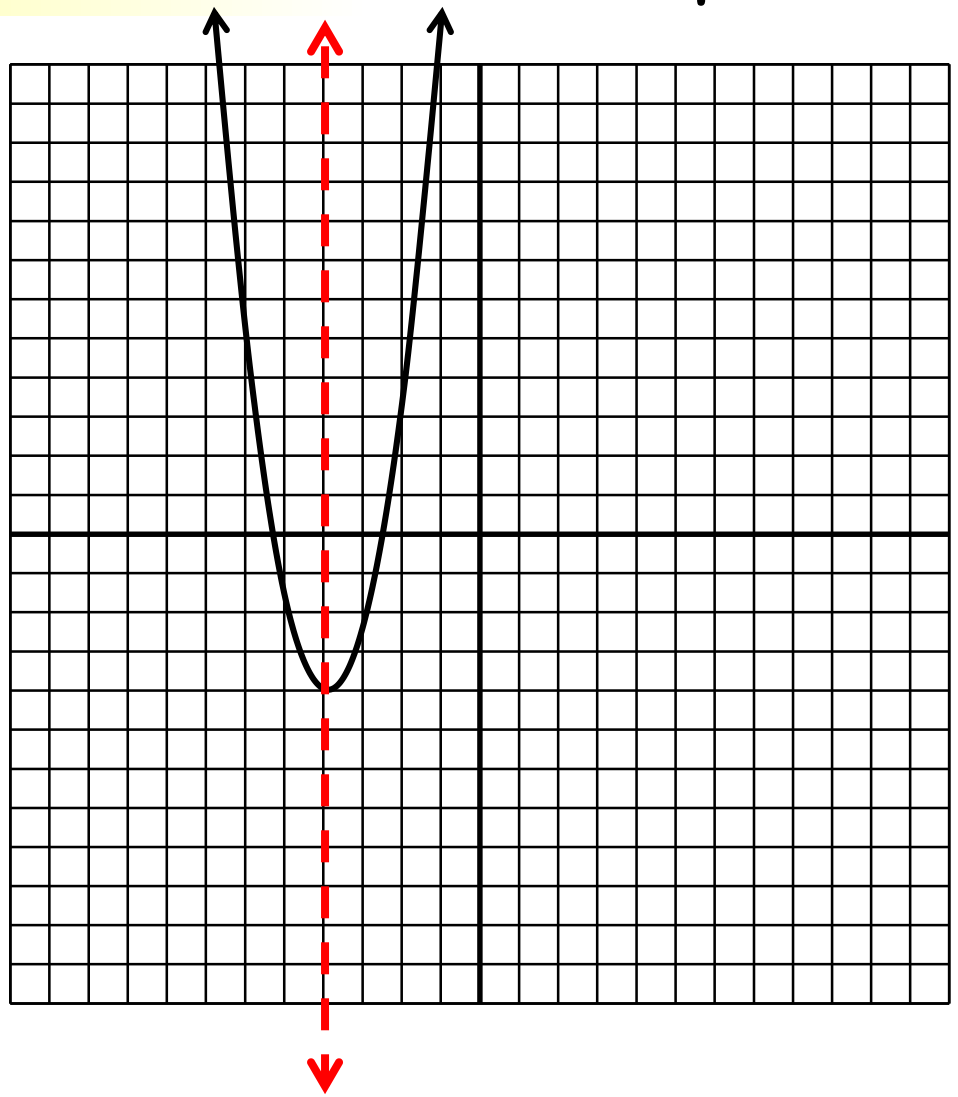
Left/ Right	Up/ Down	× 2
1	1	2
2	4	8
3	9	18
4	16	32

Vertex: $(-4, -7)$

Axis of Symmetry: $x = -4$

Describe the transformation:

Vertically stretched by a factor of 2, Left 4, Down 7



Multiply the Up/Down numbers by the front number.

Transformations on Parabolas

$$f(x) = -3(x-2)^2 + 6$$

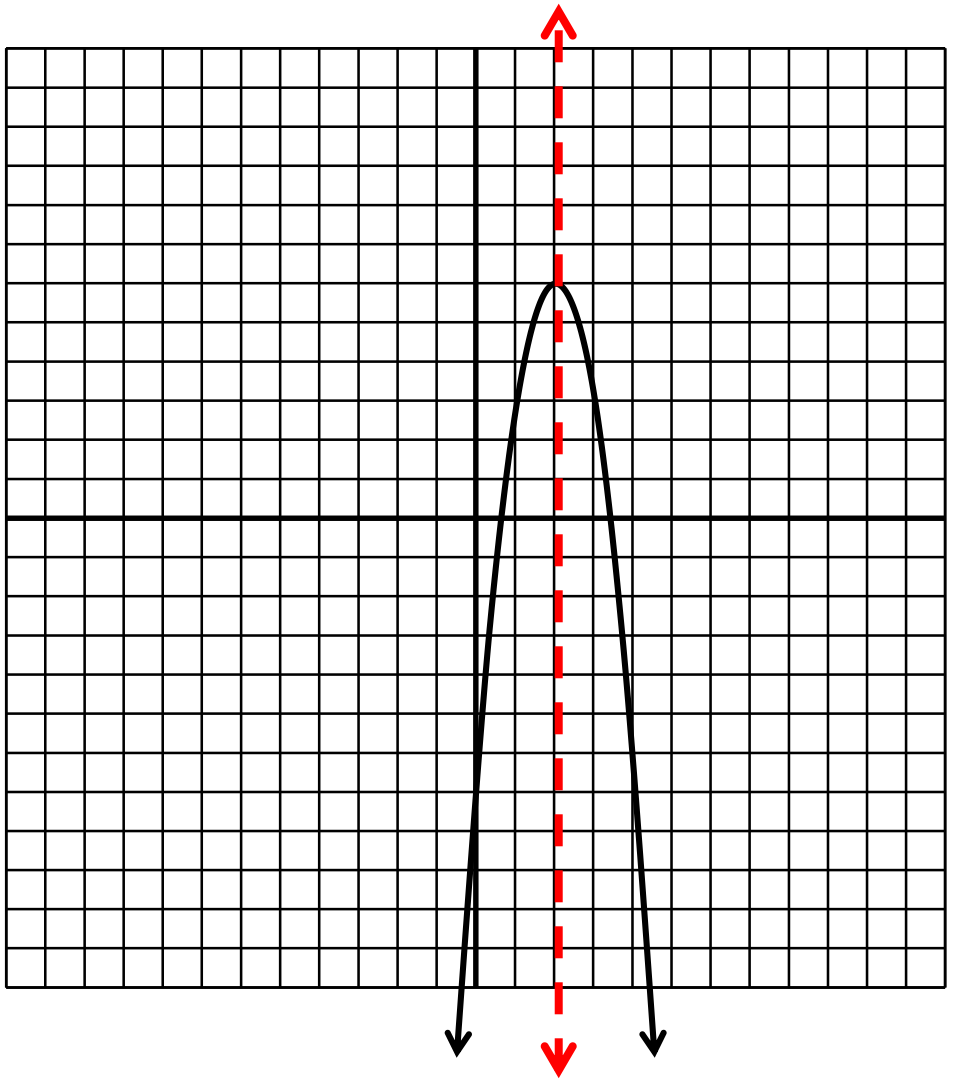
Left/ Right	Up/ Down	× 3
1	1	3
2	4	12
3	9	27
4	16	48

Vertex: (2, 6)

Axis of Symmetry: $x = 2$

Describe the transformation:

Reflected over the x-axis, vertically stretched by a factor of 3, Right 2, Up 6



Multiply the Up/Down numbers by the front number.

Transformations on Parabolas

$$f(x) = \frac{1}{4}(x+5)^2$$

Left/ Right	Up/ Down	$\times \frac{1}{4}$
1	1	$\frac{1}{4}$
2	4	1
3	9	$\frac{9}{4}$
4	16	4

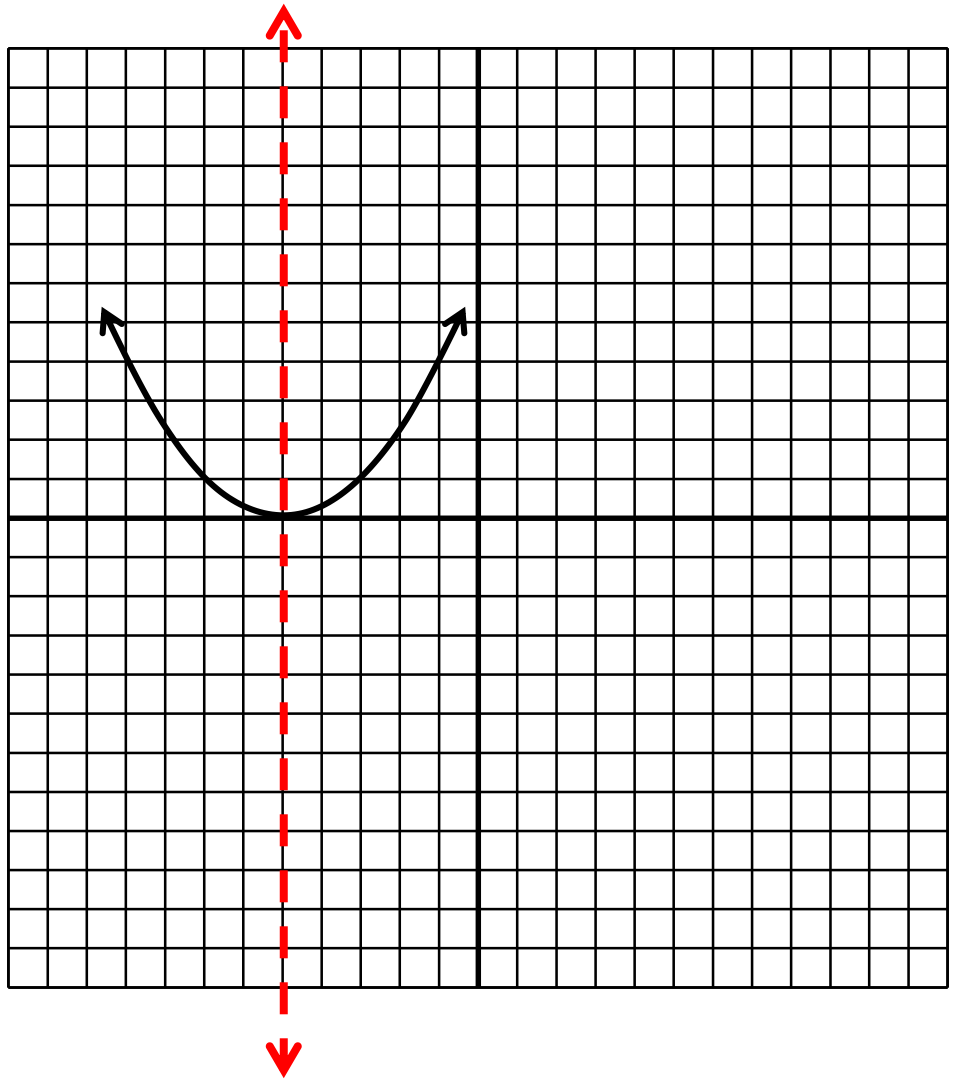
Vertex: $(-5,\ 0)$

Axis of Symmetry:

$$x = -5$$

Describe the transformation:

Vertically compressed by a factor of ¼, Left 5

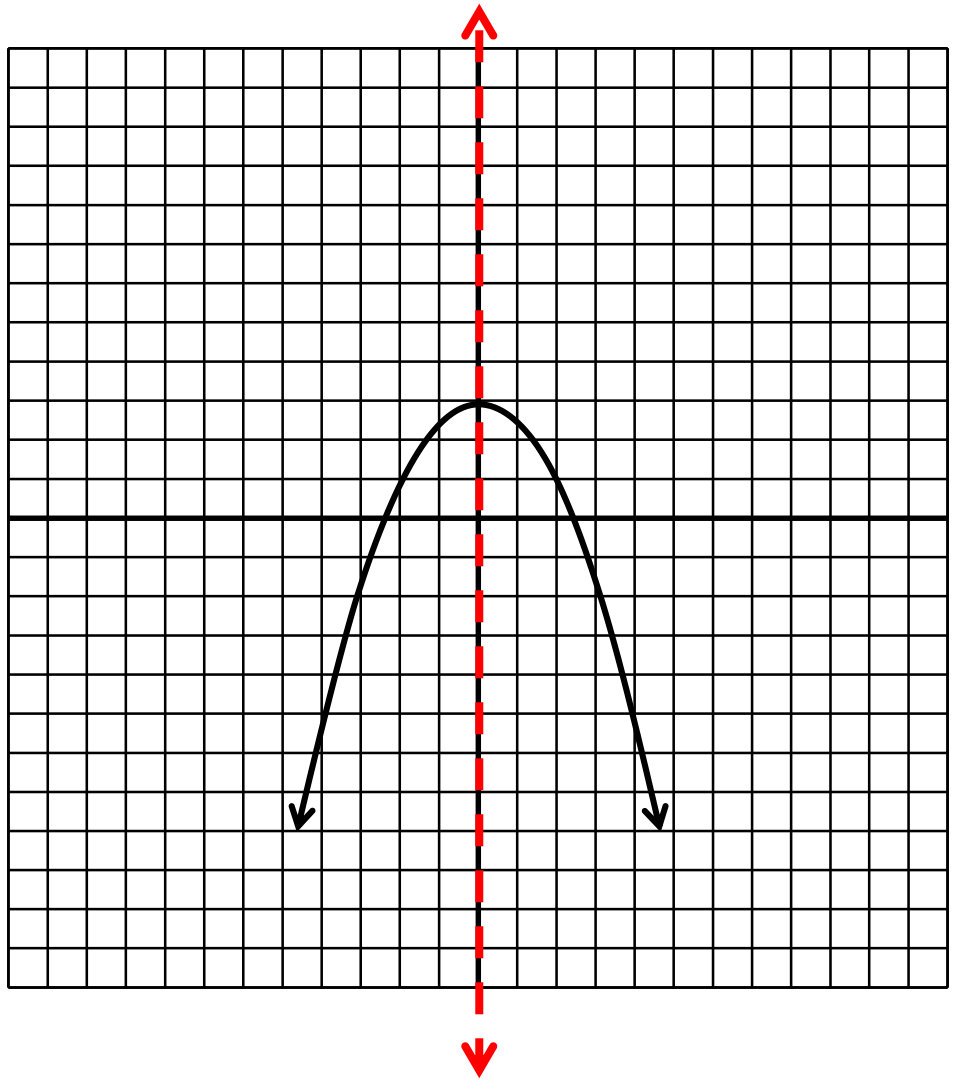


Multiply the Up/Down numbers by the front number.

Transformations on Parabolas

$$f(x) = -\frac{1}{2}x^2 + 3$$

Left/ Right	Up/ Down	$\times \frac{1}{2}$
1	1	$\frac{1}{2}$
2	4	2
3	9	$\frac{9}{2}$
4	16	8



Vertex: (0, 3)

Axis of Symmetry:

$$x = 0$$

Describe the transformation:

Reflected over the x-axis,
Vertically compressed by a factor of ½, Up 3

Multiply the Up/Down numbers by the front number.

Assignment:

Graphing Quadratic Equations B Worksheet

$$f(x) = -3(x-4)^2 - 2$$

Vertex:

Axis of Symmetry:

Describe the transformation: