

## Bell Work

1. What is the vertex of the quadratic function to the right?
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 domain in set notation for the quadratic parent function?

$$f(x) = \frac{2}{3}(x - 5)^2 + 3$$

$$f(x) = (x + 3)^2 - 8$$

**Vertex:  $(-3, -8)$**

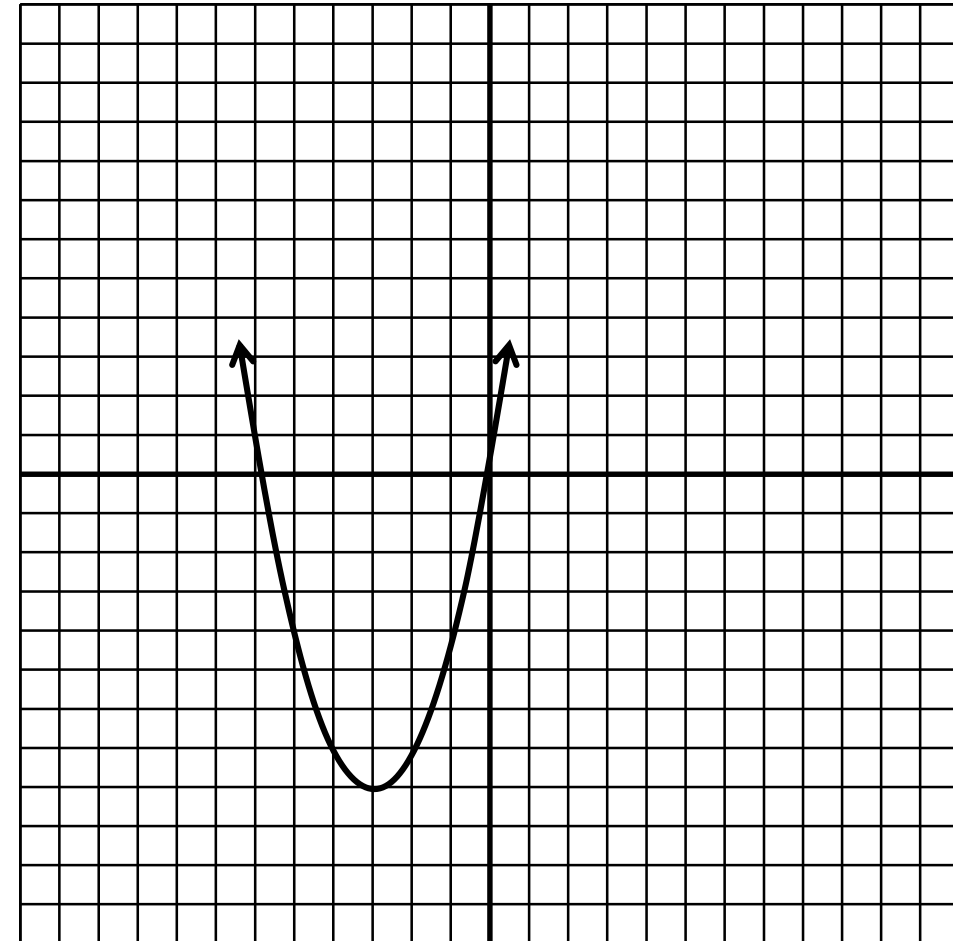
*Only graph the quadratic function until it crosses the x-axis.*

**Roots:  $x = -.1, -5.9$**

*Estimate where the parabola crosses the x-axis.*

*There will always be 2 answers.*

Left/Right	Up/Down
1	1
2	4
3	9
4	16



**Roots:**

*The domain values where the function becomes 0. We are finding the x values that make  $y = 0$ .*

$$f(x) = -3(x - 5)^2 + 7$$

**Vertex: (2, 6)**

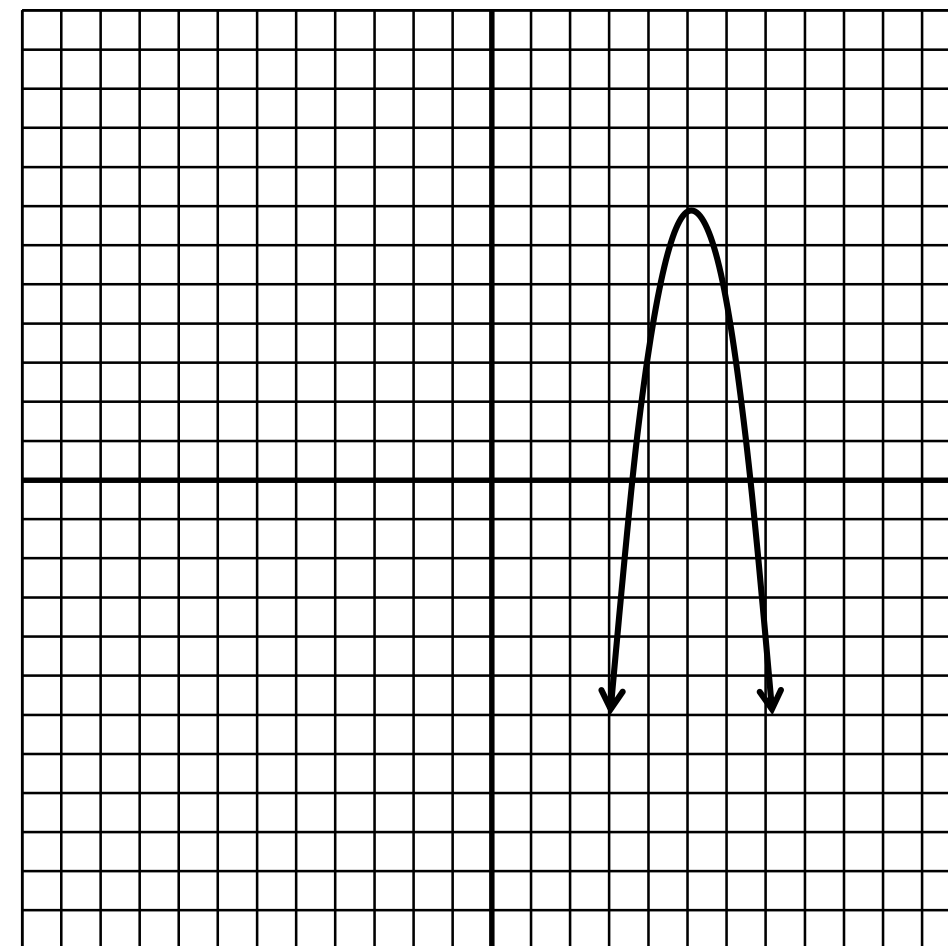
*Only graph the quadratic function until it crosses the x-axis.*

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

**Roots:  $x = 3.5, 6.5$**

*Estimate where the parabola crosses the x-axis.*

*There will always be 2 answers.*



# Graphing Quadratic Functions to Find the Roots

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

**Vertex:  $(-5, 0)$**

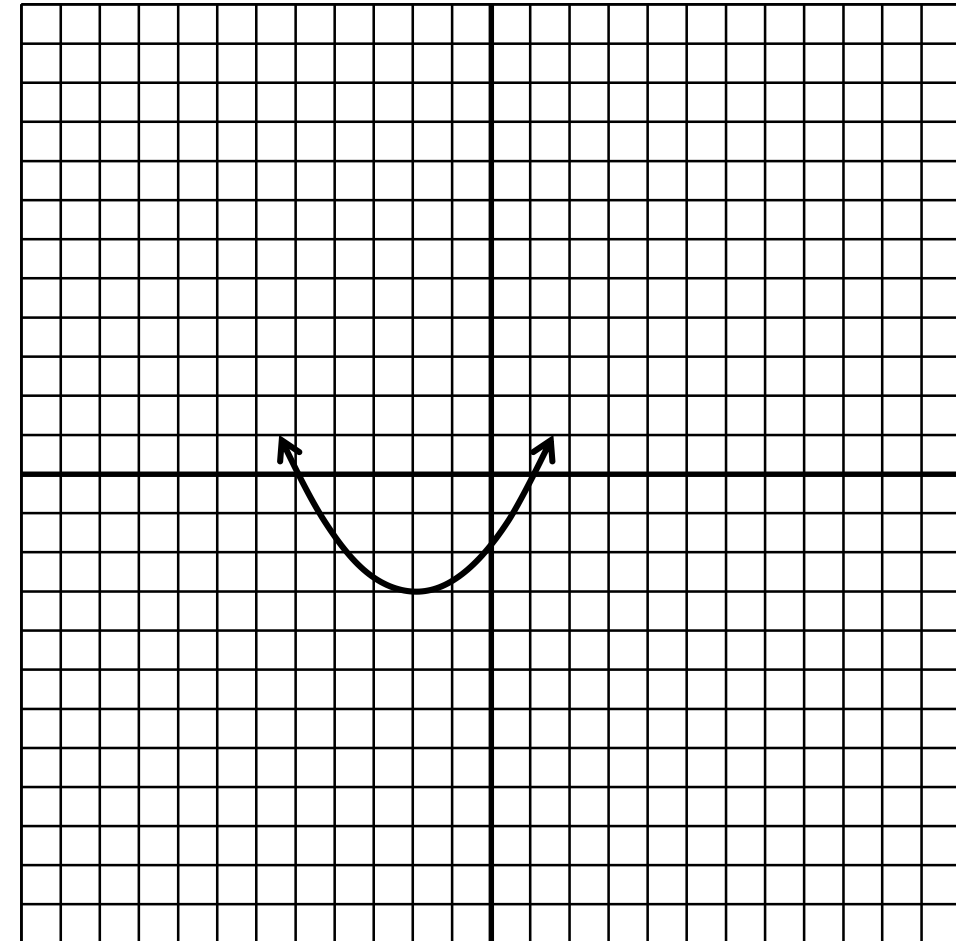
*Only graph the quadratic function until it crosses the x-axis.*

**Roots:  $x = -5, 1$**

*No need to estimate here.*

*There will always be 2 answers.*

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



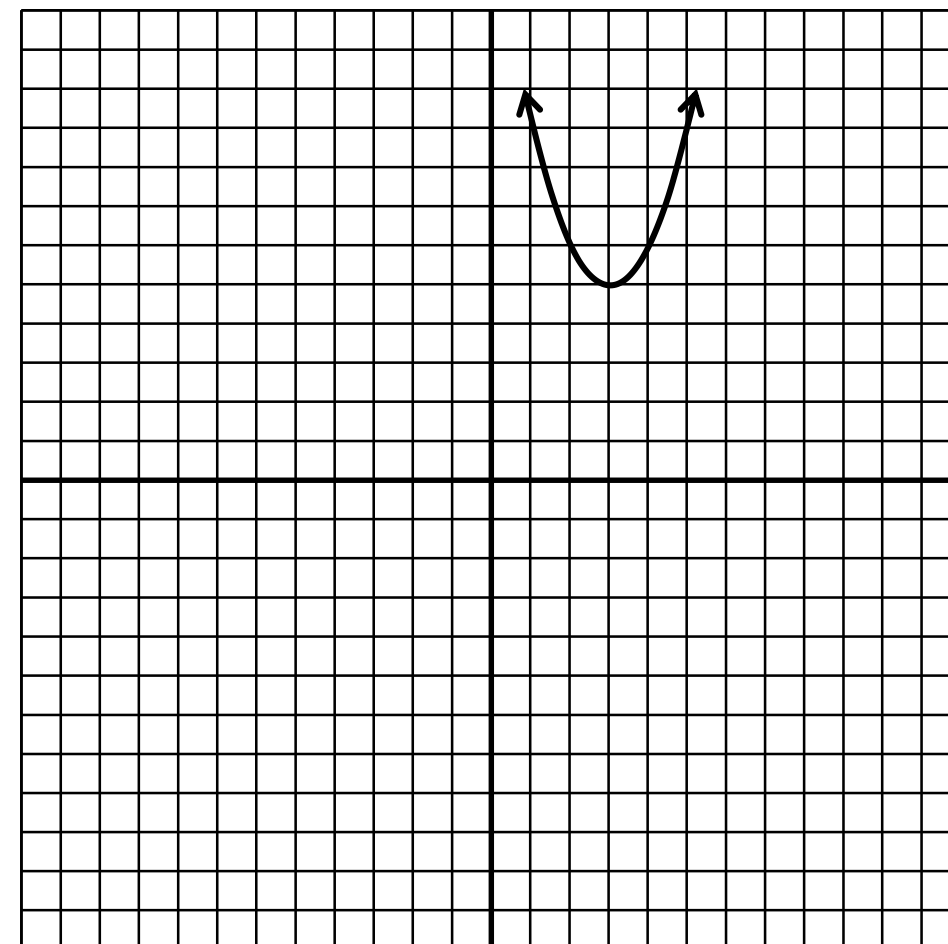
$$f(x) = (x - 4)^2 + 5$$

**Vertex: (4, 5)**

*Only graph the quadratic function until it crosses the x-axis.*

Left/ Right	Up/ Down
1	1
2	4
3	9
4	16

**Roots: No real roots, because the function doesn't cross the x-axis.**



**Assignment:**

**Graphing Quadratic Functions to Find the  
Roots Worksheet**