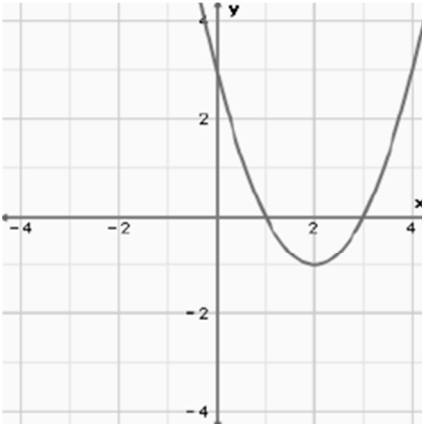
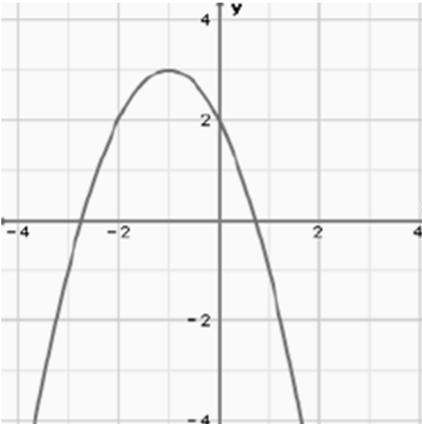
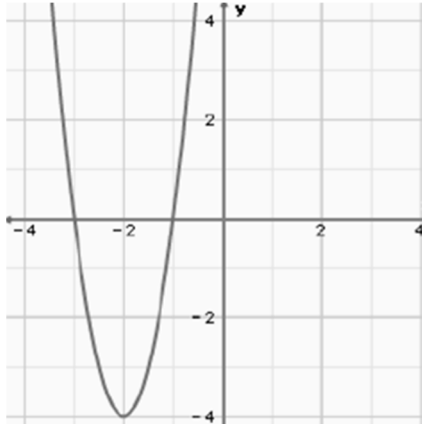
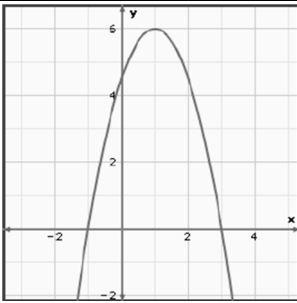
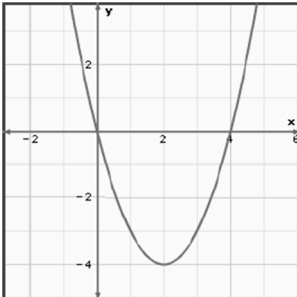


DAY 2 – Changing Quadratic Relations: The Value of 'a'

1. State the vertex and the maximum or minimum value for each parabola.

a.  Vertex: _____ max or min?: _____	b.  Vertex: _____ Max or Min?: _____	c.  Vertex: _____ Max or Min?: _____
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2. State the key features of each graph.

	zeros	y-intercept	vertex	axis of symmetry	optimal value
					
					

3. For each of the following, state how the value of a is affecting the basic parabola (*compression, stretch and/or reflection*). The basic parabola, $y = x^2$, is shown with a dotted line.

a. Graph showing two parabolas on a coordinate plane. The x-axis ranges from -2 to 2, and the y-axis ranges from -2 to 2. A dotted parabola $y = x^2$ is shown. A solid parabola $y = 0.5x^2$ is shown opening upwards, and another solid parabola $y = -0.5x^2$ is shown opening downwards. Both have a vertex at the origin.	b. Graph showing two parabolas on a coordinate plane. The x-axis ranges from -2 to 2, and the y-axis ranges from -2 to 2. A dotted parabola $y = x^2$ is shown. A solid parabola $y = 2x^2$ is shown opening upwards, and another solid parabola $y = -2x^2$ is shown opening downwards. Both have a vertex at the origin.	c. Graph showing two parabolas on a coordinate plane. The x-axis ranges from -2 to 2, and the y-axis ranges from -2 to 2. A dotted parabola $y = x^2$ is shown. A solid parabola $y = 0.1x^2$ is shown opening upwards, and another solid parabola $y = -0.1x^2$ is shown opening downwards. Both have a vertex at the origin.	d. Graph showing two parabolas on a coordinate plane. The x-axis ranges from -2 to 2, and the y-axis ranges from -2 to 2. A dotted parabola $y = x^2$ is shown. A solid parabola $y = 3x^2$ is shown opening upwards, and another solid parabola $y = -3x^2$ is shown opening downwards. Both have a vertex at the origin.

4. State the transformations and graph each of the following parabolas.

	a. $y = 2x^2$	b. $y = -\frac{1}{3}x^2$
(i) TRANSFORMATIONS		
(ii) GRAPH	A coordinate plane with x and y axes. The grid extends from -5 to 5 on both axes. The x-axis is labeled 'x' and the y-axis is labeled 'y'.	A coordinate plane with x and y axes. The grid extends from -3 to 3 on both axes. The x-axis is labeled 'x' and the y-axis is labeled 'y'.

5. For each set of quadratics, circle the one that is wider
- a. $y = 0.2x^2$

b. $y = 3x^2$

c. $y = 5x^2$

$y = 5x^2$

$y = -0.4x^2$

$y = 2x^2$
- d. $y = 0.1x^2$

e. $y = -0.2x^2$

f. $y = 0.9x^2$

$y = 0.25x^2$

$y = 0.03x^2$

$y = -0.4x^2$