

Slide 5 ~ The A Value, part 1 ~ $y = ax^2$

- a. What does the a value do the blue graph? _____
- b. When a is greater than 1, what does it do to the blue graph? _____
- c. When a is between 0 and 1, what does it do to the blue graph? _____
- d. If there is only an a value, what will the vertex always be? _____

Slide 6 ~ The A Value, part 2 ~ $y = ax^2$

- a. What does the a value do the blue graph? _____
- b. When a is less than 1, what does it do to the blue graph? _____

Practice: Describe the transformations from the given function to the transformed function.

a. $f(x) = x^2 \rightarrow f(x) = 4x^2$

b. $y = x^2 \rightarrow y = \frac{1}{4}x^2$

c. $f(x) \rightarrow 6f(x)$

d. $f(x) = x^2 \rightarrow f(x) = -x^2$

f. $y = x^2 \rightarrow y = -\frac{1}{2}x^2$

g. $f(x) \rightarrow -4f(x)$

Putting It All Together with A, H, and K

Practice: Given the equations below, name the vertex and describe the transformations:

Equation	Transformations	Vertex
1. $y = -(x - 4)^2 + 7$		
2. $y = -2(x + 2)^2 + 5$		
3. $y = \frac{1}{2}(x - 3)^2 - 8$		

Practice: Create an equation to represents the following transformations:

- a. Shifted down 4 units, right 1 unit, and reflected across the x-axis
- b. Shifted up 6 units, reflected across the x-axis, and stretch by a factor of 3
- c. Shifted up 2 units, left 4 units, reflected across the x-axis, and shrunk by a factor of $\frac{3}{4}$.