Quadratic Investigation

Name: _____
Date: _____ Hour: ___

Use your graphing calculator to complete the following. Graphs should show the general shape and direction of the parabola.

Graph the following:

1. $y = x^2$

2. $y = 2x^2$

3. $y = 3x^2$

4. $y = 4x^2$

Of the 4 graphs you just completed, what one grows the slowest? Fastest?

_____

Graph the following:

1. $y = x^2$

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

3. $y = \frac{1}{3}x^2$

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

Of the 4 graphs you just completed, what one grows the slowest? Fastest?

_____

Graph the following:

1. $y = -x^2$

2. $y = -2x^2$

3. $y = -3x^2$

4. $y = -4x^2$

How are the above 4 graphs similar and different from the first 4 graphs you dealt with?

_____

Graph the following:

1. $y = -x^2$

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

3. $y = -\frac{1}{3}x^2$

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

How are the above 4 graphs similar and different from the first 4 graphs you dealt with?

_____

Conclusion:
What determines how fast a graph grows?

_____

What determines the direction of the parabola – what makes it open up or open down?

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