

**SREB and Math Ready  
YCHS**

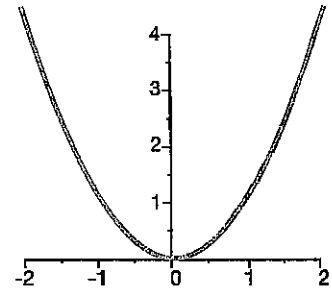
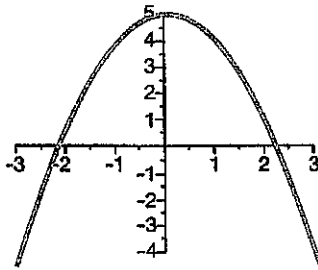
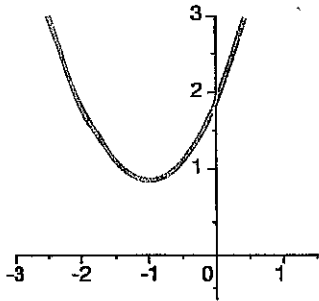
**Instructional Packet  
March 25<sup>th</sup>-April 6<sup>th</sup>**

**S. Gaines**

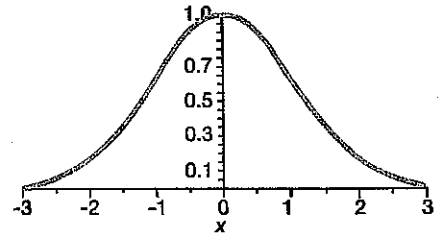
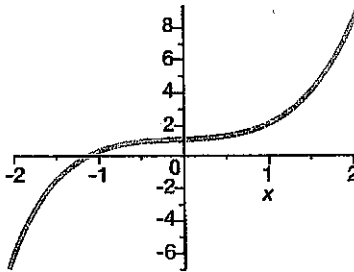
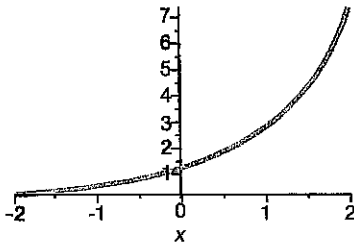
**Task #1: Quadratic or Not?**

In your groups, use the illustration to help you in defining key features of quadratic graphs. Prepare a toolkit to share with the class.

1. The following are graphs of quadratic functions:



2. The following are not graphs of quadratic functions:



Describe how quadratics differ from functions that are not quadratics. Describe any symmetries that you see, asymptotes, the domain, range, how it is decreasing or increasing, concavity.

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**Task #2: The effect of a, b, and c**

Answer the following equations for each function set. Each function set has four equations to explore.

**Function Set 1**

**Equation 1:**  $f(x) = x^2 + 2x - 3$

**Equation 2:**  $f(x) = -x^2 + 2x - 3$

**Equation 3:**  $f(x) = 3x^2 + 2x - 3$

**Equation 4:**  $f(x) = -3x^2 + 2x - 3$

What is different between equations 1 and 2?

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What is different between equations 1 and 3?

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What is different between equations 2 and 4?

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What is different between equations 3 and 4?

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What is the domain of the first function?

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What is the domain of the second function?

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What is the domain of the third function?

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What is the domain of the fourth function?

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**Function Set 2**

**Equation 1:**  $f(x) = x^2 + 2x - 3$

**Equation 2:**  $f(x) = -x^2 + 2x + 3$

**Equation 3:**  $f(x) = x^2 + 2x + 3$

**Equation 4:**  $f(x) = -x^2 + 2x - 3$

What is different between equations 1 and 2?

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What is different between equations 1 and 3?

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What is different between equations 2 and 4?

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What is different between equations 3 and 4?

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What is the domain of the first function?

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What is the domain of the second function?

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What is the domain of the third function?

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What is the domain of the fourth function?

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**Function Set 3**

**Equation 1:**  $f(x) = x^2 + 2x - 3$

**Equation 2:**  $f(x) = x^2 - 2x - 3$

**Equation 3:**  $f(x) = 3x^2 + 2x - 3$

**Equation 4:**  $f(x) = 3x^2 - 2x - 3$

What is different between equations 1 and 2?

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What is different between equations 1 and 3?

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What is different between equations 2 and 4?

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What is different between equations 3 and 4?

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What is the domain of the first function?

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What is the domain of the second function?

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What is the domain of the third function?

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What is the domain of the fourth function?

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**Function Set 4**

**Equation 1:**  $f(x) = x^2 + 2x - 3$

**Equation 2:**  $f(x) = 5x^2 + 2x + 5$

**Equation 3:**  $f(x) = 3x^2 + 2x - 3$

**Equation 4:**  $f(x) = -9x^2 + 2x + 4$

What is different between equations 1 and 2?

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What is different between equations 1 and 3?

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What is different between equations 2 and 4?

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What is different between equations 3 and 4?

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What is the domain of the first function?

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What is the domain of the second function?

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What is the domain of the third function?

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What is the domain of the fourth function?

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