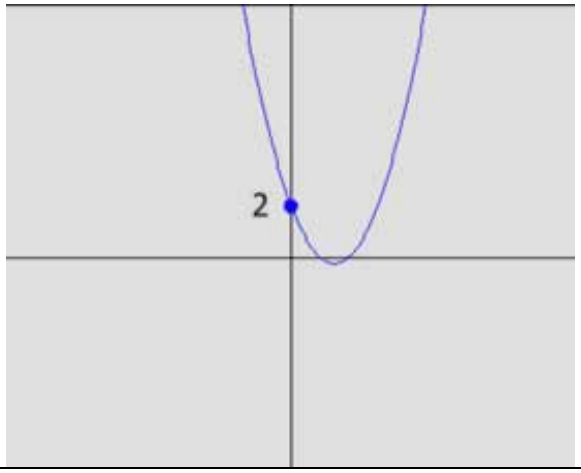
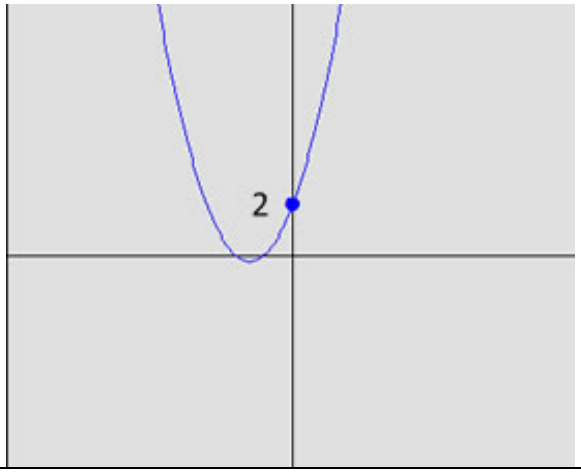
Graphing Changes in Variables in a Quadratic Equation

Using the expression, x^2-3x+2, graph changes in the differences.

1. Graph x^2-3x+2. Describe what you see.
2. Replace +3x with -3x
3. Use 5x instead of -3x (the graph will result in a non-solution because the line will not cross the x-axis).
4. Use +5 instead of +2
5. $2x^2$ is replaces x^2
6. Next, define what happens when the coefficient of x or x2 has a negative and or positive value.

1. Graph x^2-3x+2. Describe what you see. 	The parabola's y intercept is at (0,2).
2. Next, graph the same equation, but replace -3x with +3x 	When the equation reads as x^2+3x+2, an inverse of the parabola appears. Referring to the quadratic format ***$y=ax^2 + bx + c$***, if you change the value of b from negative to positive, the parabola is flipped horizontally. Compare the new image with the original above.

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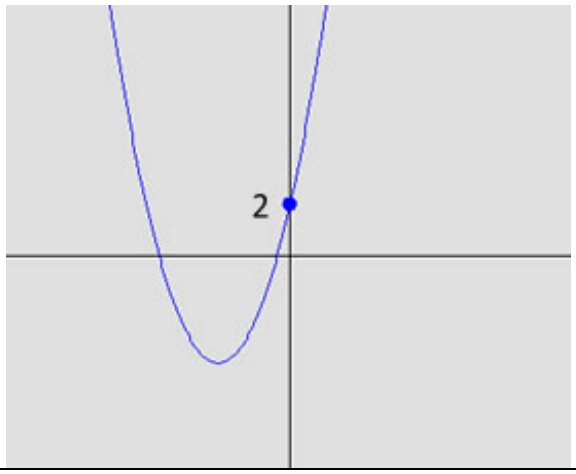
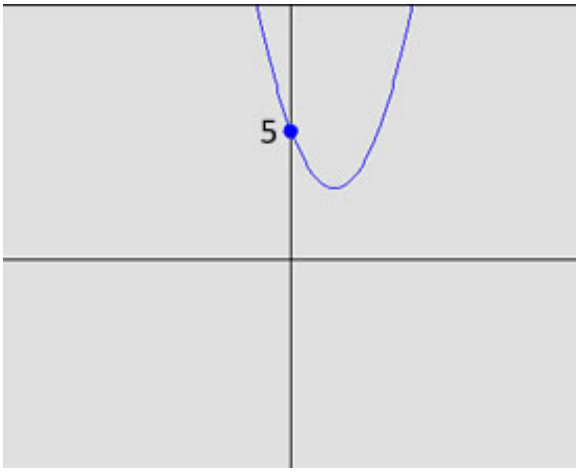
3. Use 5x instead of -3x (the graph will result in a non-solution because the line will not cross the x-axis).  	$f(x)=x^2+5x+2$ The parabola becomes larger or longer when b is increased
4. Graph the equation, but use +5 instead of +2  	When $f(x)=x^2-3x+5$ The y intercept changes from 2 to 5. The y intercept coordinates are (0,5)

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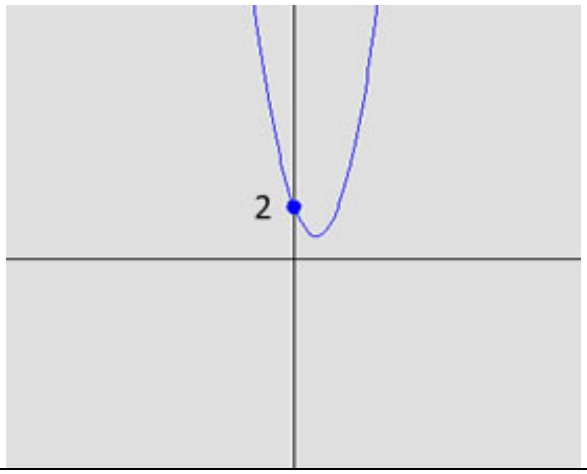
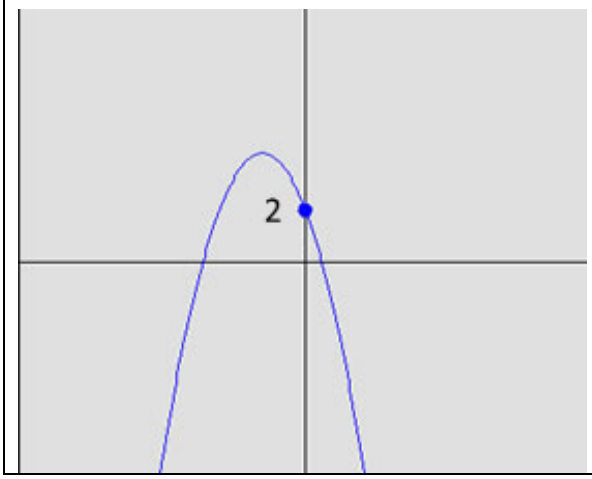
5. Graph the equation, but replace x^2 with $2x^2$. 	When f(x)=$2x^2$-3x+2 The width of the parabola decreases.
6. Finally, define what happens when the coefficient of x or x^2 has a negative and or positive value. 	f(x)= $-x^2$-3x+2 The parabola is flipped over vertically or opens downward.

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