Review of all three graphing techniques
Algebra 1B

We have graphed quadratic functions three different ways - starting with the vertex, starting with x-intercepts, and starting with the axis of symmetry. Today, for the first time, you will be asked to shift between those three graphing techniques.

It will be important to determine which graphing technique is easiest to use and the key issues associated with that technique. Here are some general guidelines.

Graphing using the vertex

- The function needs to be in the form $y = ax^2 + c$….there is no "b" value
- Identify vertex/y intercept
- Building the table of values requires the use of one random point

Graphing using x intercepts

- The function needs to be in the form $y = x^2 + bx + c$….the "a" value is one.
- The function must be factored into product of binomials or greatest common monomial to find the x intercepts.
- Building the table of values does not require the use of a random point unless the x and y intercepts are both (0, 0)

Graphing using axis of symmetry

- The functions needs to be in the form $y = ax^2 + bx + c$
- Identify the axis of symmetry
- Building the table of values requires the use of one random point.

Here are three different functions. Graph each using a different graphing technique. Please show all work that supports the final graph.

$Y = -3x^2 + 27x - 10$

$Y = \frac{1}{3} x^2 - 5$

$Y = x^2 - 3x - 28$