Algebra II Classwork/Homework 11/7 or 11/8

Graphing with tables

Warm-up: Fold a parabola following the directions projected.

Work in your notebook today! You will need graph paper.

The reliable way to graph: make a **table**:

|  |  |
| --- | --- |
| x | y |
| -2 |  |
| -1 |  |
| 0 |  |
| 1 |  |
| 2 |  |

An equation should work for any x you choose. Try plugging in different values of x. Then graph the points you found.

Graph these in your notebook so that we can discuss them as a class:

1. Graph y = x
2. Graph y = x + 2
3. Graph y = x2
4. Graph y = x2 + 2
5. What shapes did you get? Make a hypothesis about why this happens.

Some vocabulary:

A **parabola** is the U-shaped graph that results from a quadratic equation. It has a **vertex,** which occurs when the discriminant of the quadratic equation is zero. The **axis of symmetry** is a line that passes through the vertex, so that points on opposite legs of the parabola are equidistant from the axis.

1. Graph y = x2 – 8x + 15
2. Graph y = 2x2 +12x + 13
3. Graph y = -2x
4. Graph f(x) = 4x + 4
5. Graph y = -x2 – 4
6. Identify the vertex and give the formula for the **axis of symmetry** for each parabola you graphed.
7. Find -$\frac{-b}{2a}$ for each quadratic function that you graphed.

**Make sure you finish all twelve of these questions as homework if not done in class.**

Need a review? Check out:

<https://www.khanacademy.org/math/algebra/quadratics/quad-standard-form-alg1/v/graphing-a-parabola-using-roots-and-vertex>