Vocabulary: Quadratics in Polynomial Form



**Vocabulary**

* Axis of symmetry – a line that divides a shape into two parts that are mirror images of each other.

axis of symmetry

vertex

* The axis of symmetry of a parabola goes through the vertex of the parabola.
* The equation of the axis of symmetry of the graph of *y* = *ax*2 + *bx* + *c*, where *a* ≠ 0, is *x* = .
	+ - For example, the equation of the axis of symmetry of *y* = *x*2 – 2*x* – 8 (shown to the right) is:

*x* =  = 1

* Parabola – the graph of a quadratic function.
* For example, the graph of *y* = *x*2 – 2*x* – 8 (shown above) is a parabola.
* Quadratic function – a function of the form *y* = *ax*2 + *bx* + *c*, where *a* ≠ 0.
* The “*a* ≠ 0” part is necessary because, if *a* = 0, the function becomes *y* = *bx* + *c*, which is linear.
* The graph of a quadratic function is always a parabola.
* Vertex of a parabola – the point that is the maximum or minimum of a parabola.
* The vertex is the *minimum* when the parabola opens up, and it is the *maximum* when the parabola opens down.
* The vertex always lies on the axis of symmetry.
* For example, the vertex of *y* = *x*2 – 2*x* – 8 (graph shown above) is (1, –9):

 *y* = *x*2 – 2*x* – 8

 *y* = (1)2 – 2(1) – 8

= 1 – 2 – 8

 = –9