Vocabulary: Quadratics in Factored Form



**Vocabulary**

* + - * Factored form of a quadratic function – a function of the form *y* = *a*(*x* – *r*1)(*x* – *r*2), where *a* ≠ 0 and *r*1 and *r*2 are the roots of the related equation.
* Linear factor – a first-degree factor of a polynomial.
	+ For example, the polynomial *x*2 – 2*x* – 8 = (*x* + 2)(*x* – 4), so the linear factors of
	*x*2 – 2*x* – 8 are (*x* + 2) and (*x* – 4).
* Parabola – the graph of a quadratic function.

***x*-intercepts**

**vertex**

* For example, the graph of *y* = (*x* + 2)(*x* – 4) shown to the right is a parabola.
* Polynomial – a monomial or sum of monomials.
	+ Each monomial is called a *term* of the polynomial.
* For example, *x*2 – 2*x* – 8 is a polynomial with three terms.
* Quadratic function – a function in which *y* depends on the square of *x*.
* The polynomial form of a quadratic function is *y* = *ax*2 + *bx* + *c* and the factored form is *y* = *a*(*x* – *r*1)(*x* – *r*2), where *a* ≠ 0.
* The graph of a quadratic function is always a parabola.
* Root of an equation – a quantity that makes the related function equal to 0.
* 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.
* For example, the vertex of the parabola shown above is a minimum.
* *x*-intercept – the *x*-coordinate where a graph intersects the *x*-axis.
* For example, the *x*-intercepts of the graph above are –2 and 4.