

Anatomy of a Parabola

9th Grade

Vertex, axis, roots and direction — everything a quadratic graph tells you.

Every quadratic graphs as a parabola. Its key features come straight from a , b and c .

axis: $x = -b/2a$

$a > 0$

It has a minimum at the vertex.

opens upward

$a < 0$

It has a maximum at the vertex.

opens downward

y-intercept

Set $x = 0$ and everything else vanishes.

c

Vertex

The y comes from putting that x back in.

$x = -b/2a$, then substitute

Roots, zeros, solutions and x -intercepts all mean the same thing.
Different words, one idea.