

Plotting the Parabola

How to plot : $x(v) = a v^2 + b v + c$

Step 1.

Examine the sign for the leading coefficient

If $a > 0$ then the valley shape:

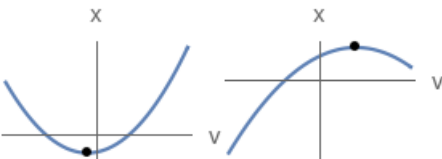


If $a < 0$ then the hill shape:



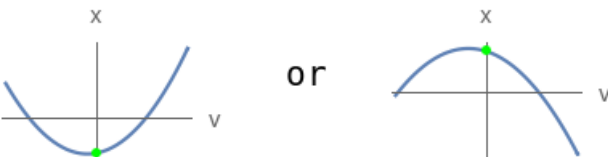
Step 2.

Compute the vertex: $(-\frac{b}{2a}, x(-\frac{b}{2a}))$



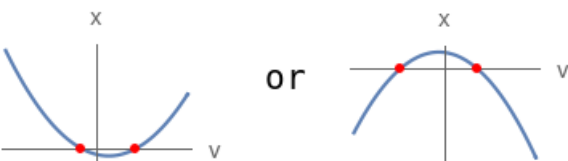
Step 3.

Compute the x-intercept by setting $v=0$, $0^2 a + 0 b + c = c$



Step 4.

Compute the v-intercepts by solving: $a v^2 + b v + c = 0$



Step 5.

Sketch a rough plot, try to connect vertex to intercepts:

