

Plotting the Parabola

How to plot : $r(w) = aw^2 + bw + c$

Step 1.

Examine the sign for the leading coefficient

If $a > 0$ then the valley shape:

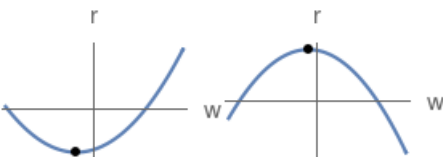


If $a < 0$ then the hill shape:



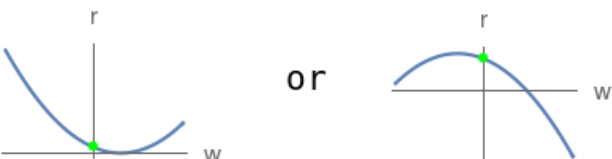
Step 2.

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



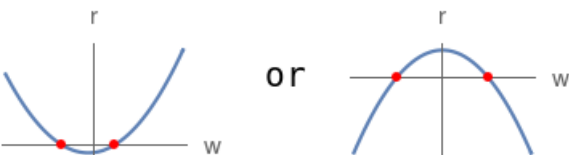
Step 3.

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



Step 4.

Compute the w-intercepts by solving: $aw^2 + bw + c = 0$



Step 5.

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

