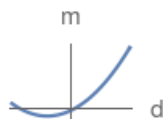# Plotting the Parabola

How to plot : $m(d) = a\,d^2 + b\,d + c$
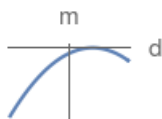
Step 1.

Examine the sign for the leading coefficent

If a $>$ 0 then the valley shape:
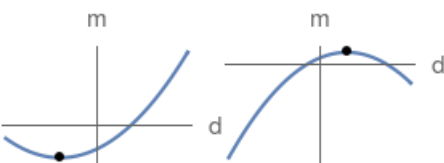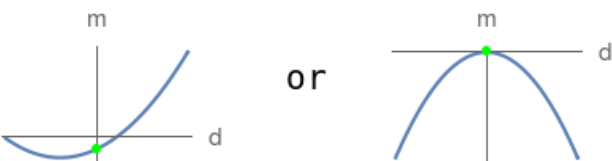

If a $<$ 0 then the hill shape:

Step 2.

Compute the vertex: $\left(-\dfrac{b}{2a}, m\left(-\dfrac{b}{2a}\right)\right)$
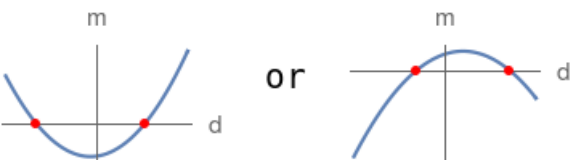

Step 3.

Compute the m-intercept by setting d=0, $0^2\,a + 0\,b + c = c$

 or

Step 4.

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

 or

Step 5.

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

 or