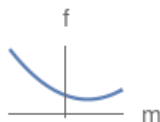# Plotting the Parabola

How to plot : $f(m) = a\,m^2 + b\,m + c$

Step 1.

Examine the sign for the leading coeffient

If a $>$ 0 then the valley shape:
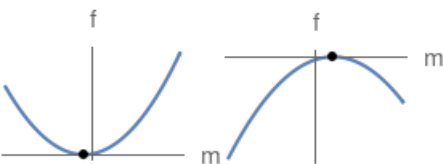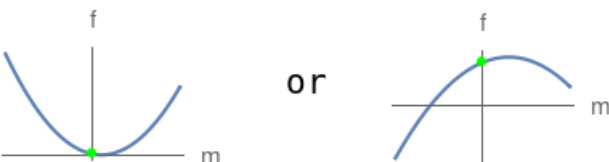

If a $<$ 0 then the hill shape:

Step 2.

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

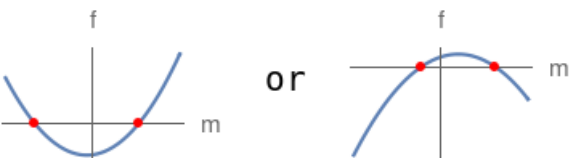## Step 3.

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

   or

Step 4.

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

   or

Step 5.

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

   or