

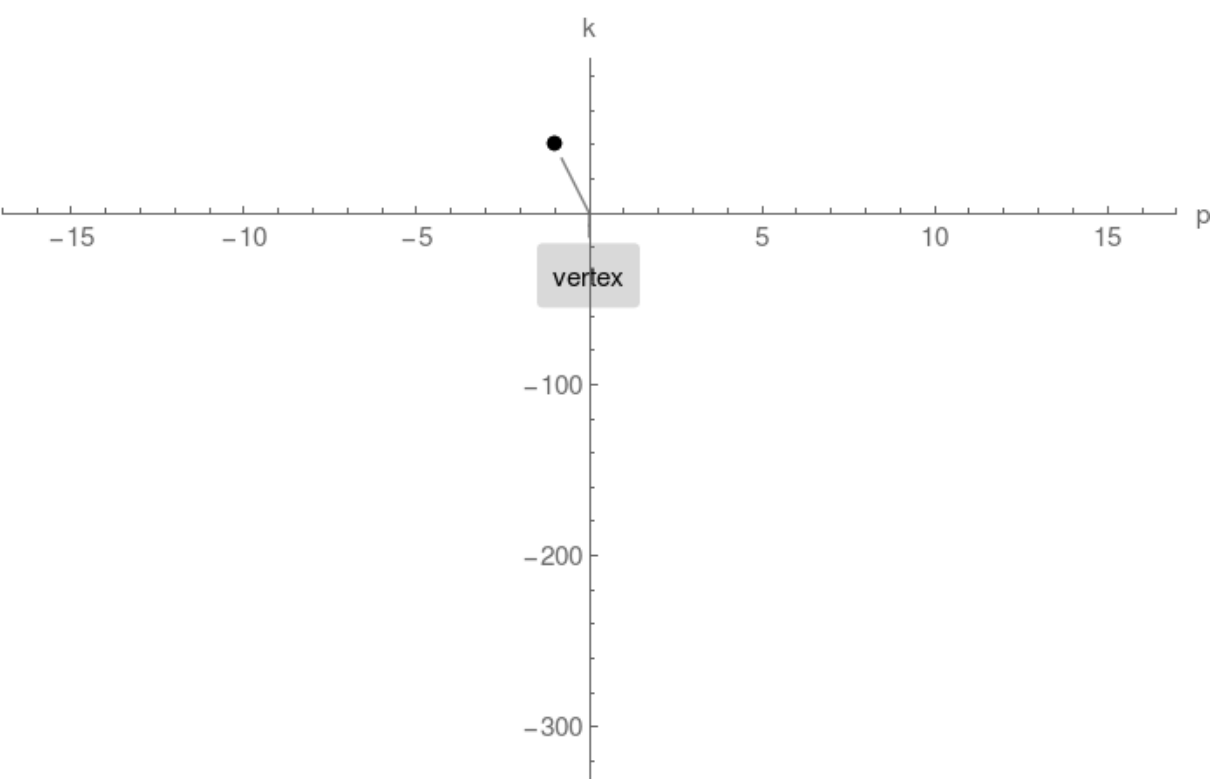
Example 1. 2 horizontal intercepts found

Plot $k(p) = -p^2 - 2p + 39$

Step 1.

Compute vertex and plot single point:

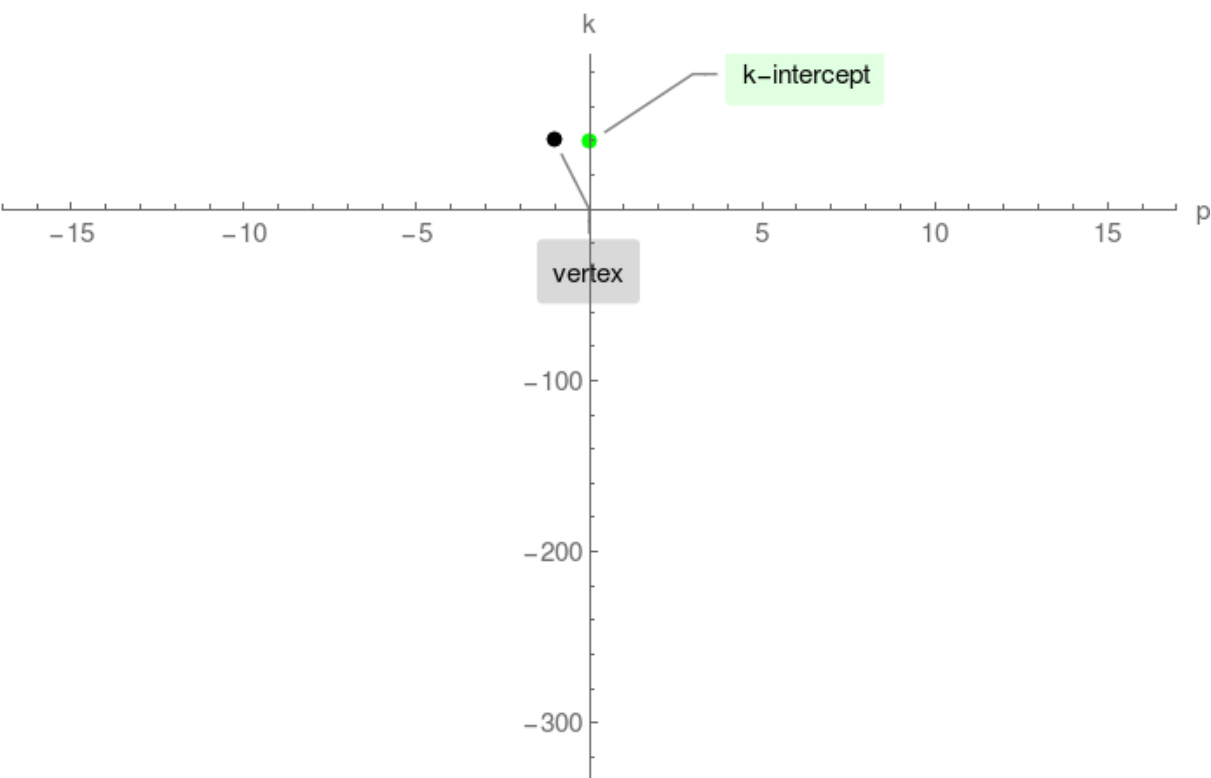
vertex = $(-1, 40)$



Step 2.

Compute k-intercept and plot single point:

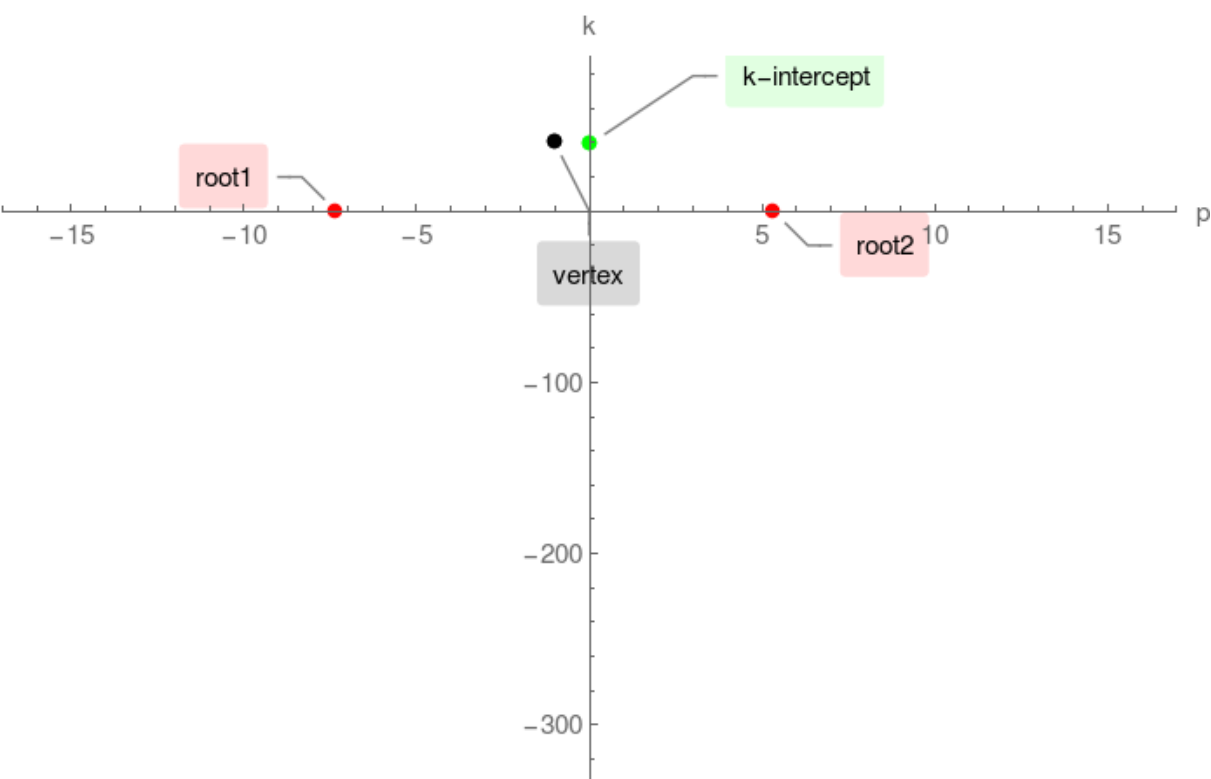
k-intercept = $(0, 39)$



Step 3.

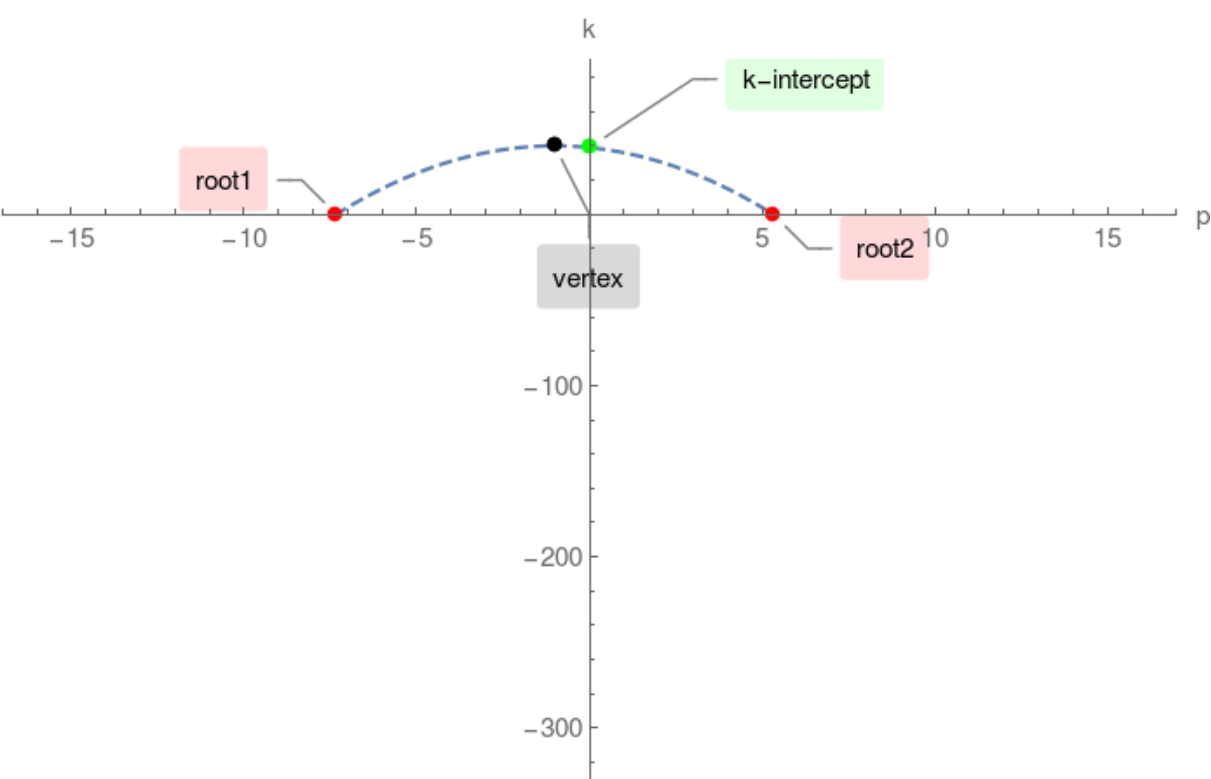
Compute p-intercepts by solving $-p^2 - 2p + 39 = 0$:

$(-1 - 2\sqrt{10}, 0)$, $(-1 + 2\sqrt{10}, 0)$



Step 4.

connect the above computed points:



Step 5.

Extend the parabola beyond the range of intercepts

