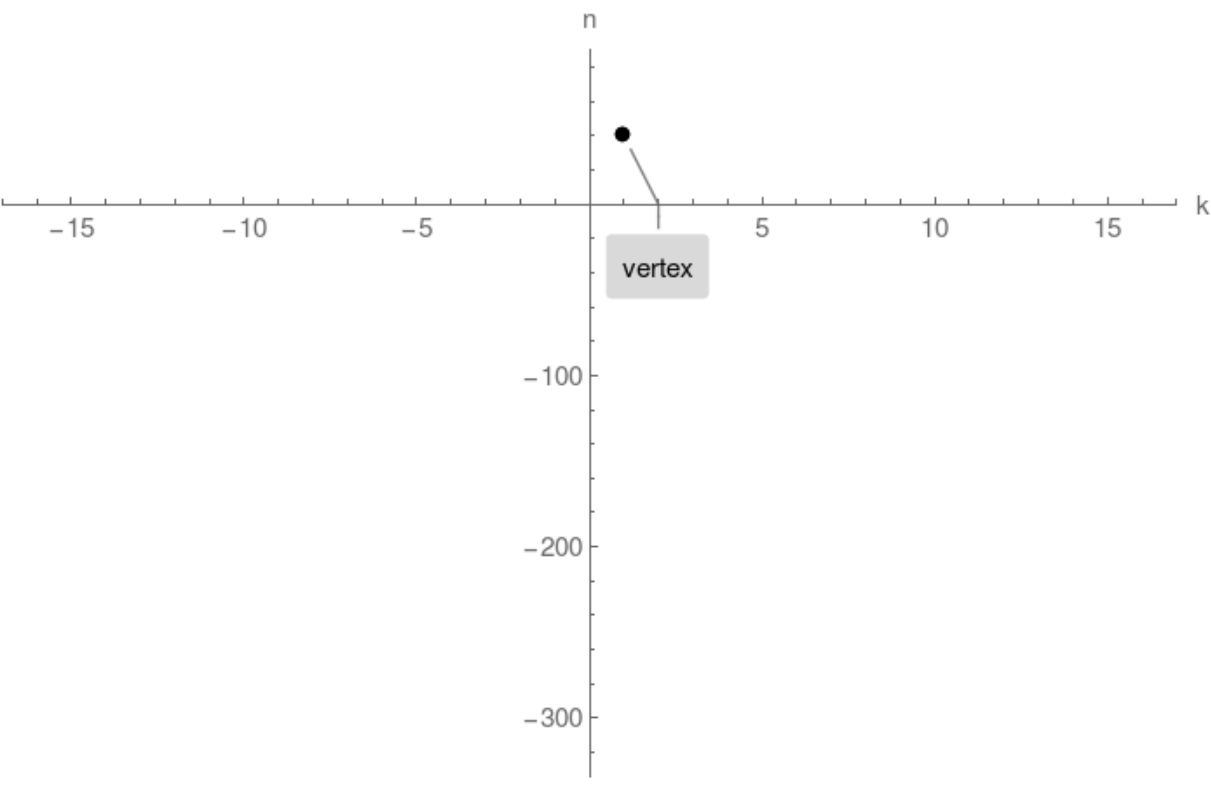
Example 1. 2 horizontal intercepts found

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

Step 1.

Compute vertex and plot single point:

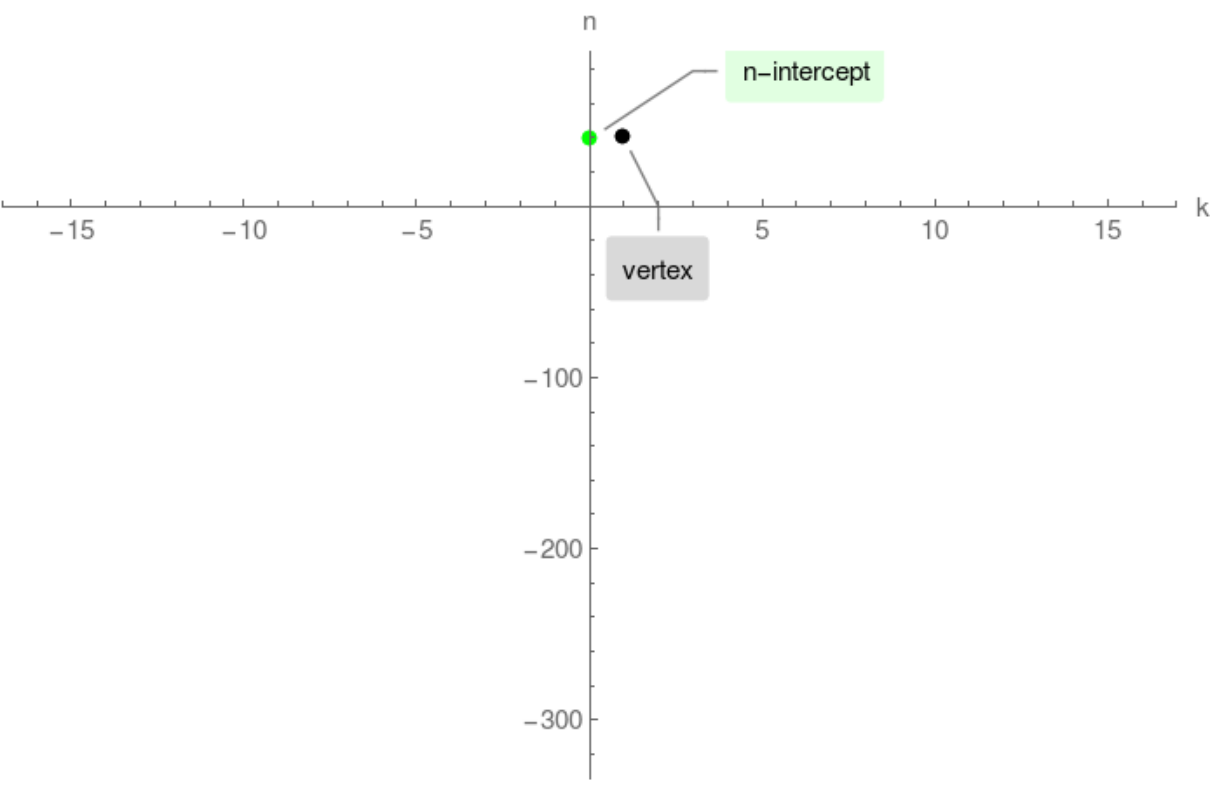
vertex = (1, 40)



Step 2.

Compute n-intercept and plot single point:

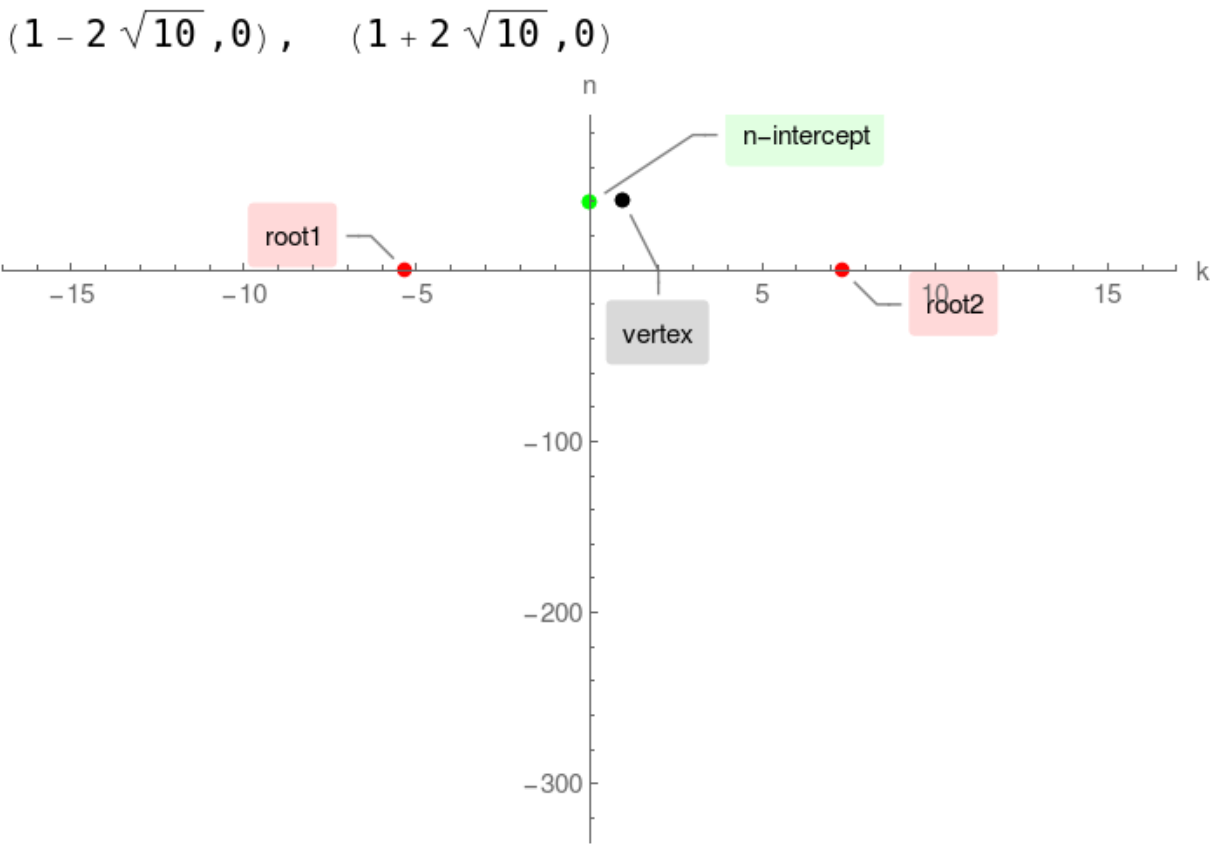
n-intercept = (0, 39)



Step 3.

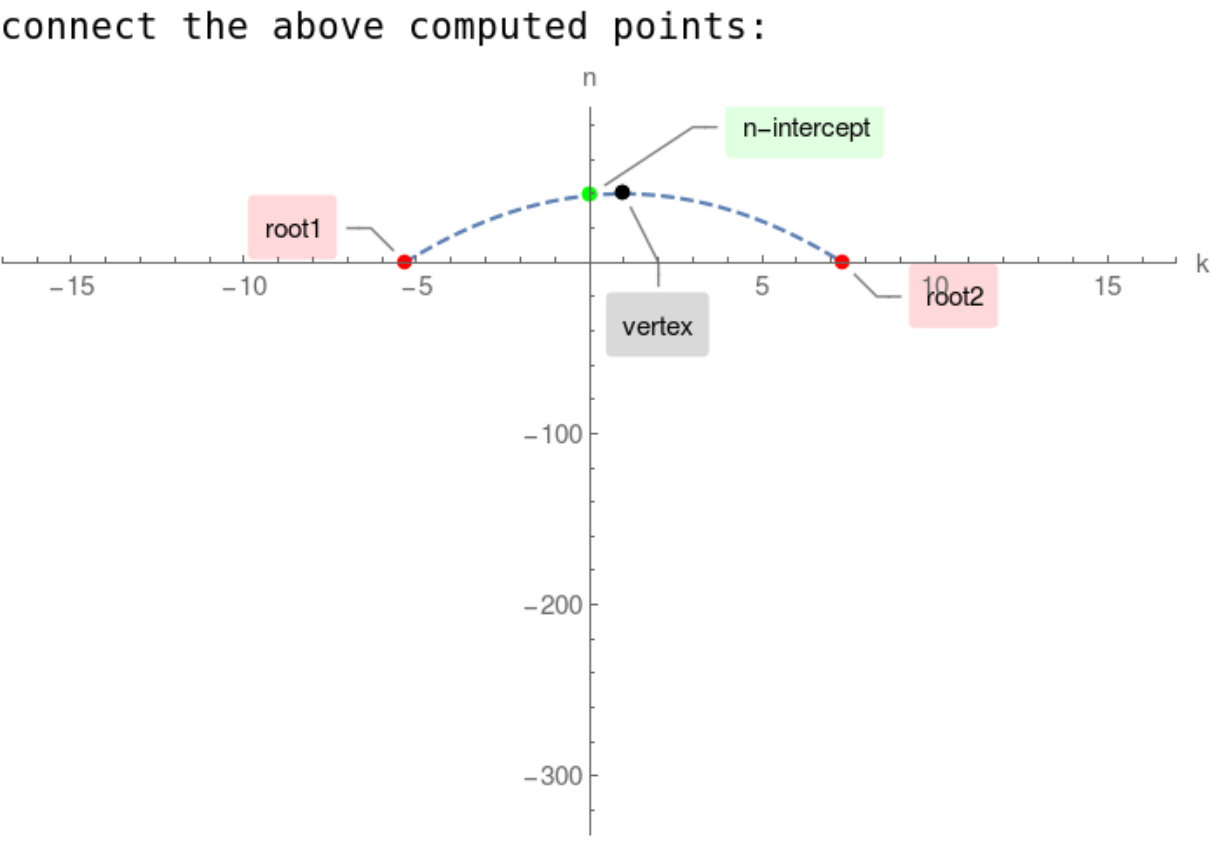
Compute k-intercepts by solving $-k^2 + 2k + 39 = 0$:

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



Step 4.

connect the above computed points:



Step 5.

Extend the parabola beyond the range of intercepts