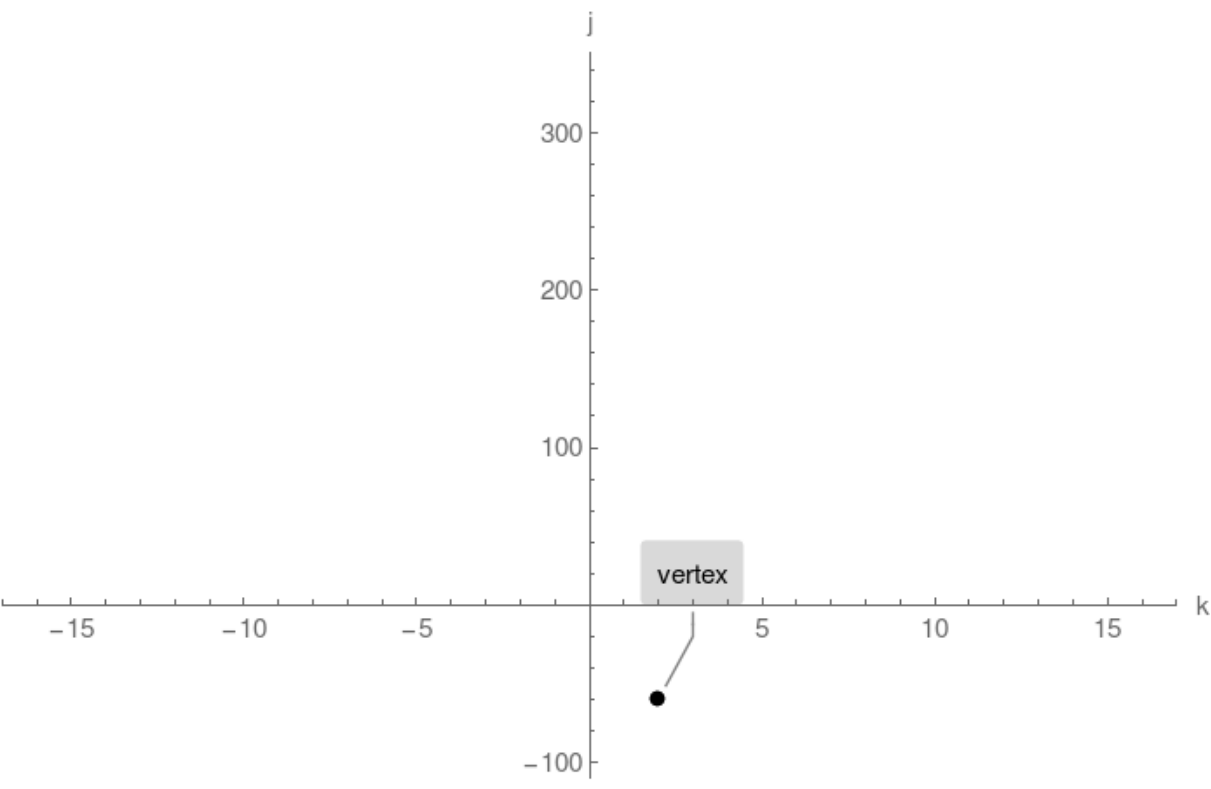
Example 1. 2 horizontal intercepts found

Plot $j(k) = k^2 - 4k - 56$

Step 1.

Compute vertex and plot single point:

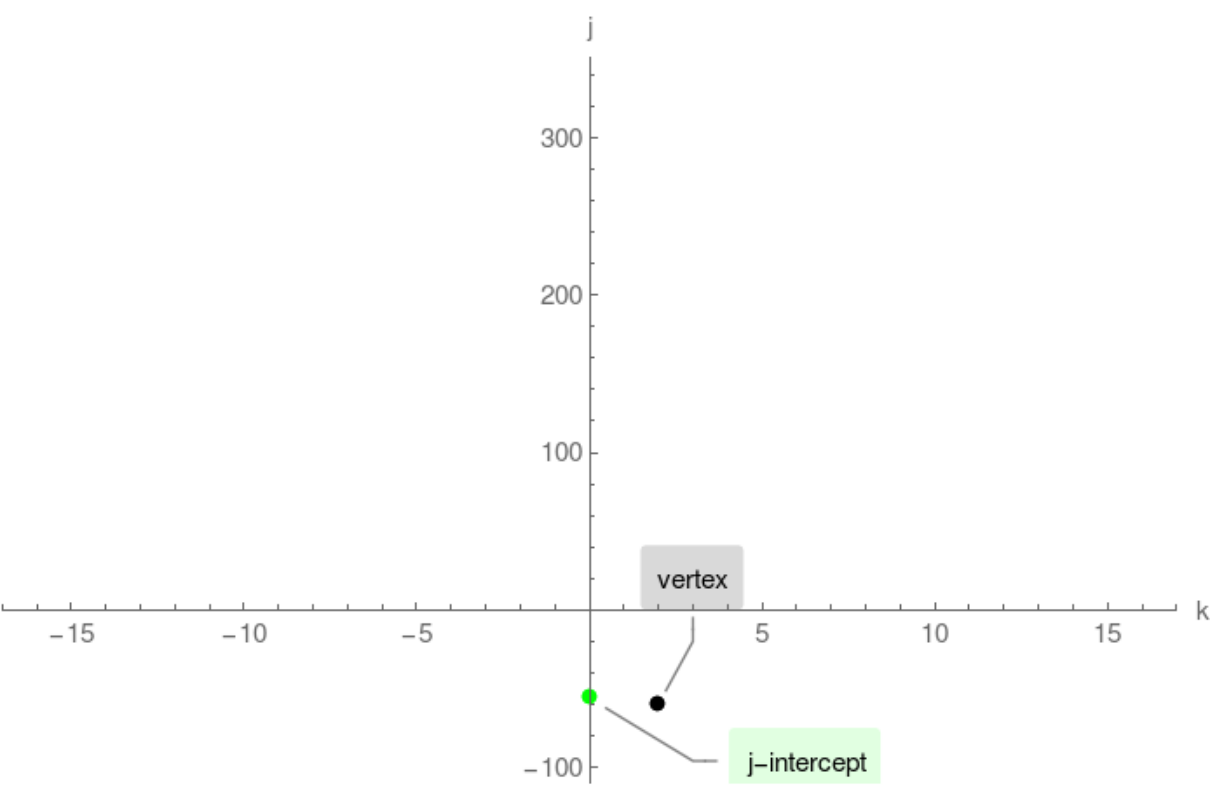
vertex $= (2, -60)$



Step 2.

Compute j−intercept and plot single point:

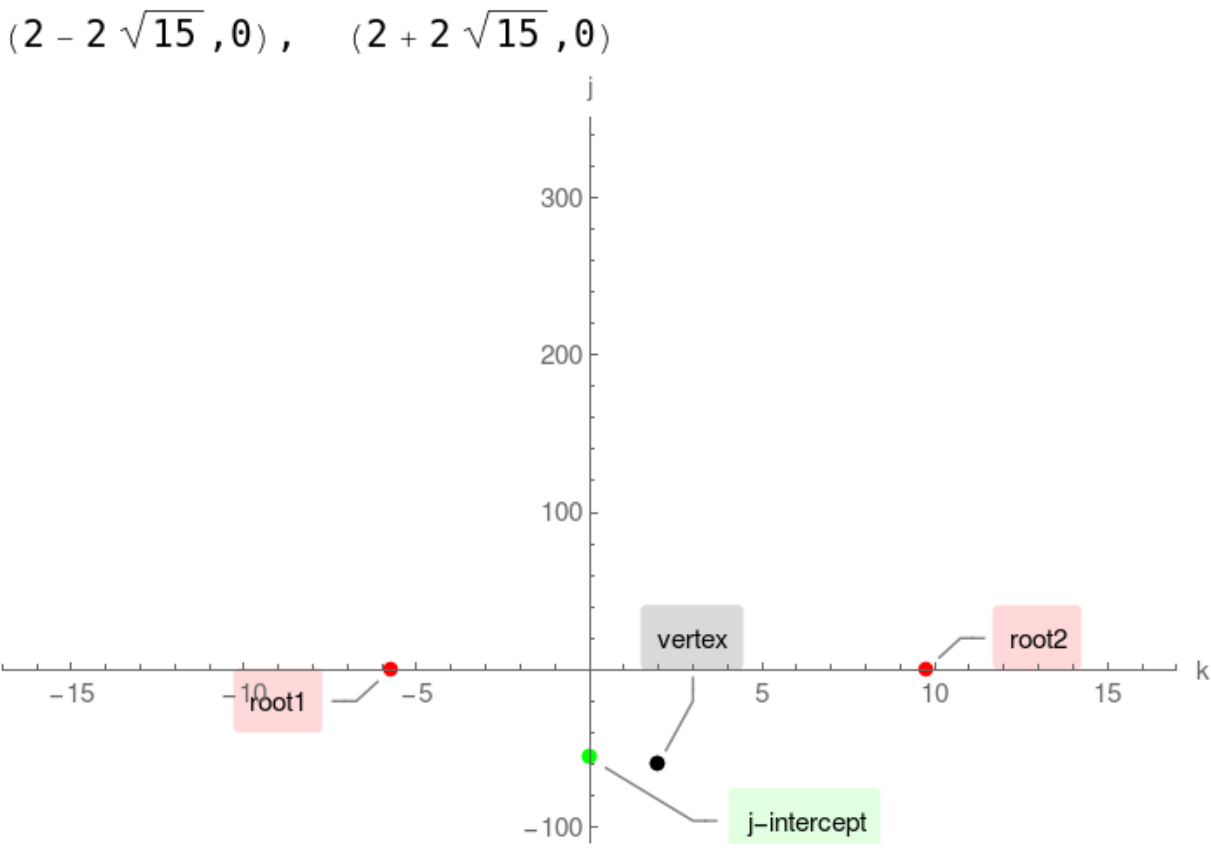
j−intercept $= (0, -56)$



Step 3.

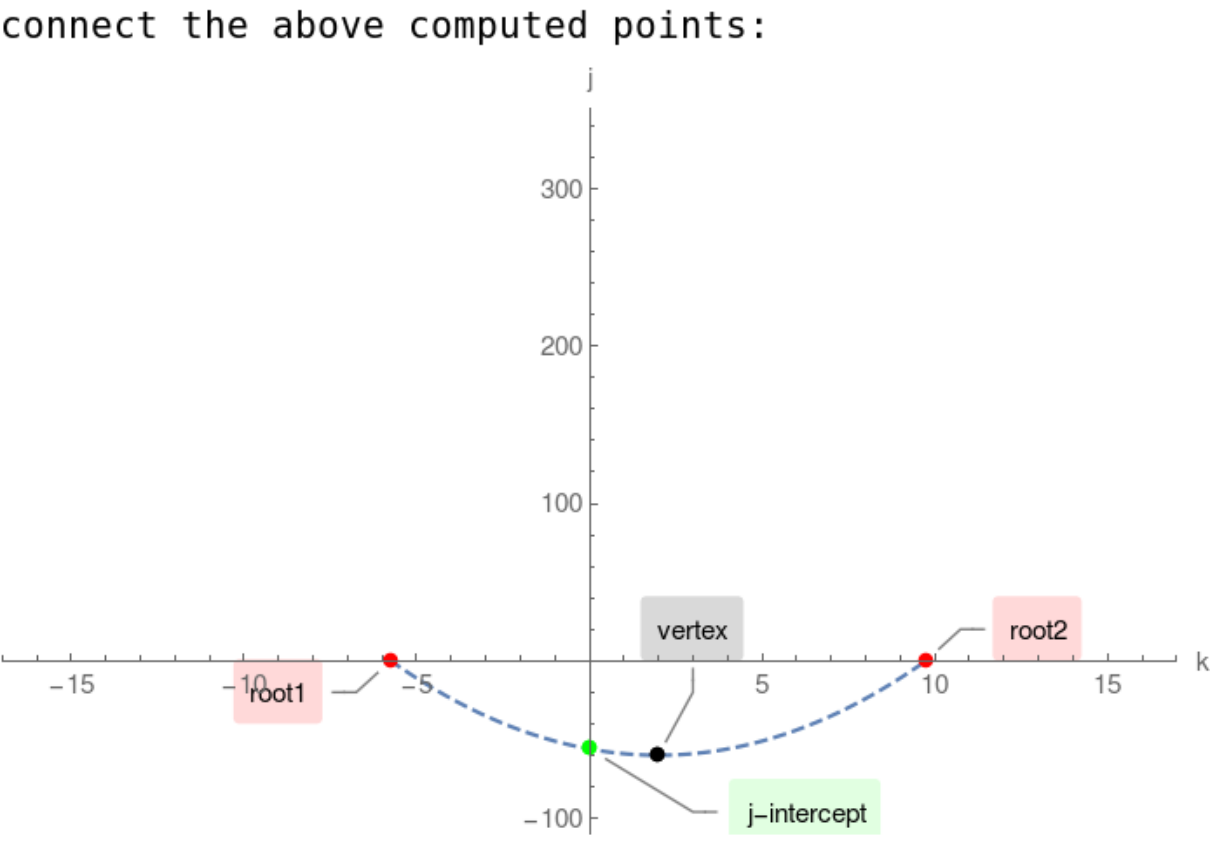
Compute k−intercepts by solving $k^2 - 4k - 56 = 0$:

$(2 - 2\sqrt{15}, 0)$, $(2 + 2\sqrt{15}, 0)$



Step 4.

connect the above computed points:



Step 5.

Extend the parabola beyond the range of intercepts