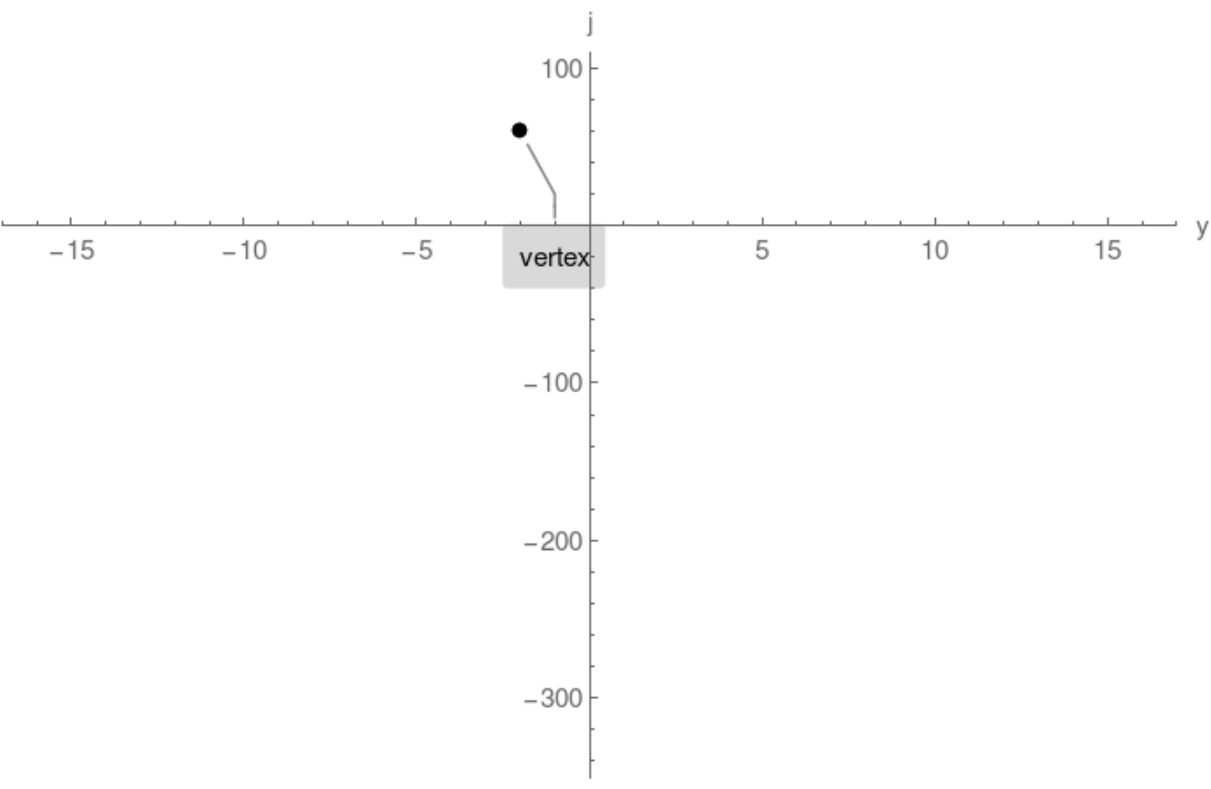
Example 1. 2 horizontal intercepts found

Plot $j(y) = -y^2 - 4y + 56$

Step 1.

Compute vertex and plot single point:

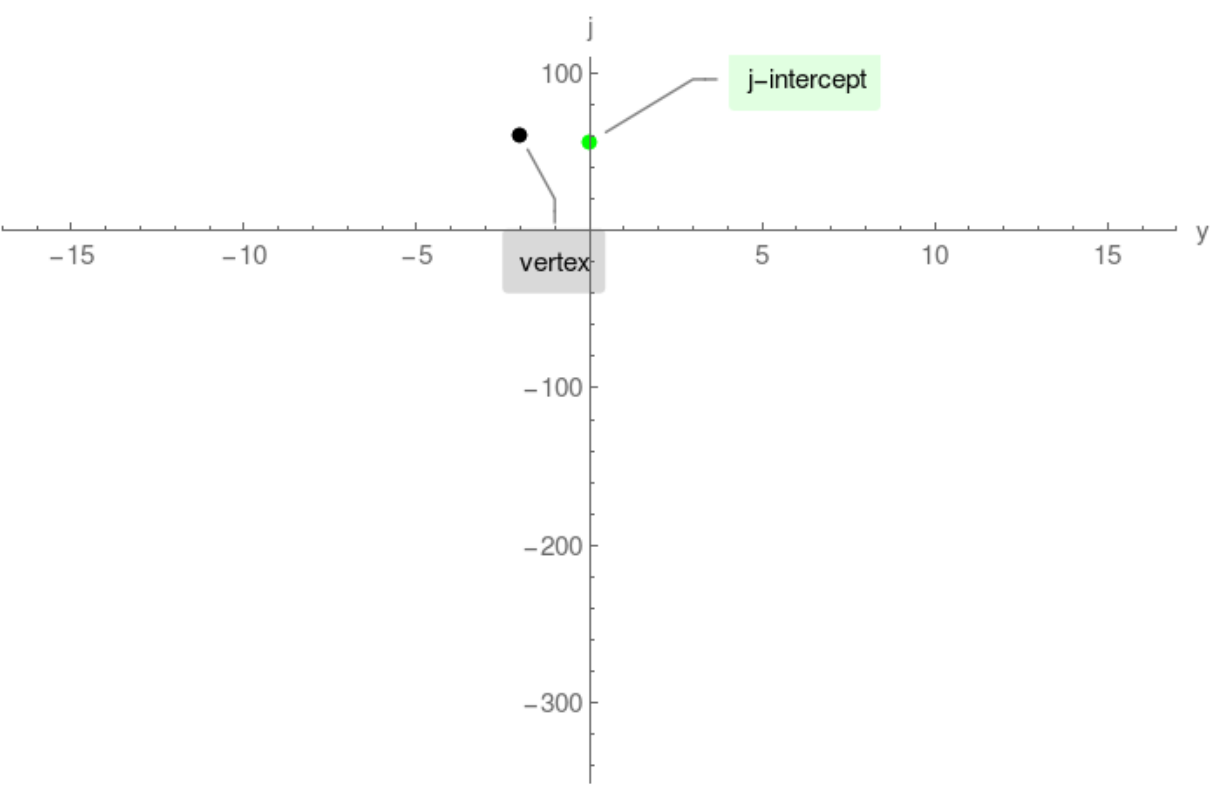
vertex $= (-2, 60)$



Step 2.

Compute j-intercept and plot single point:

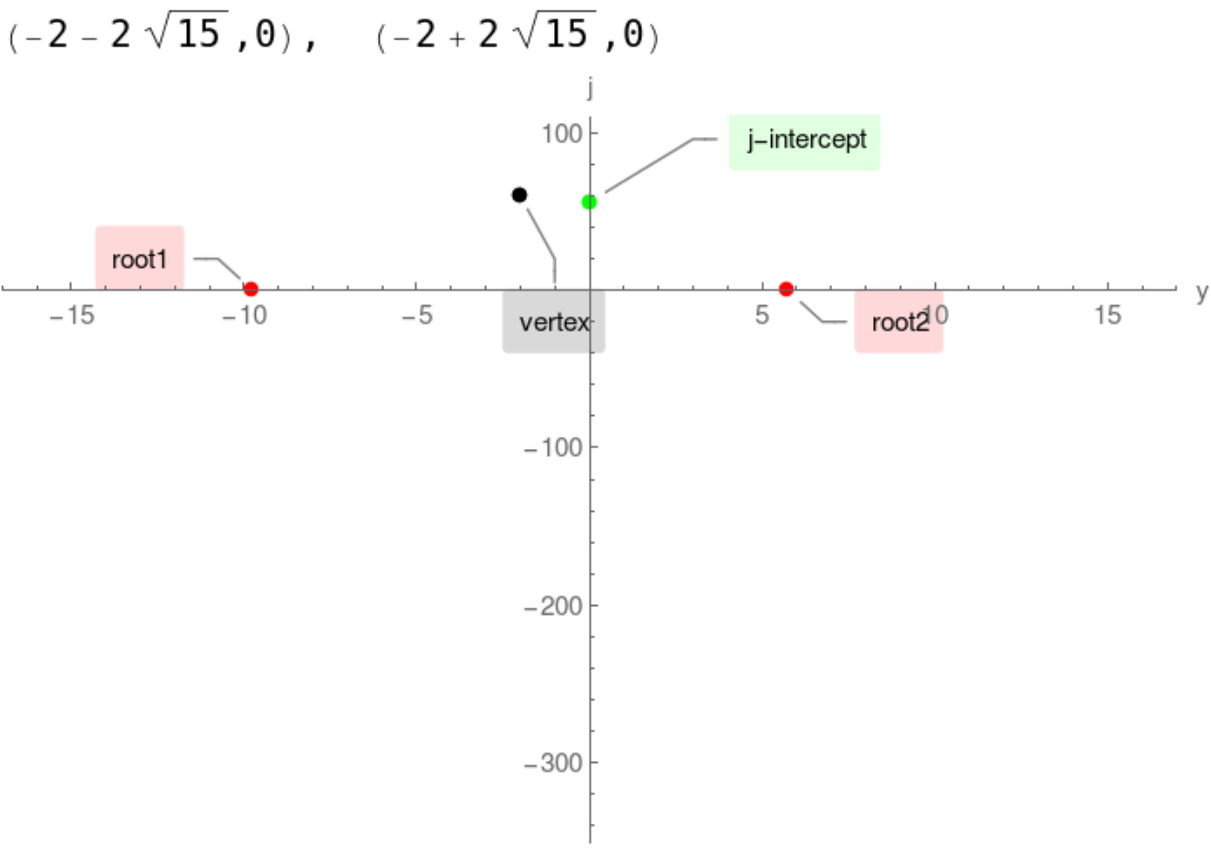
j-intercept $= (0, 56)$



Step 3.

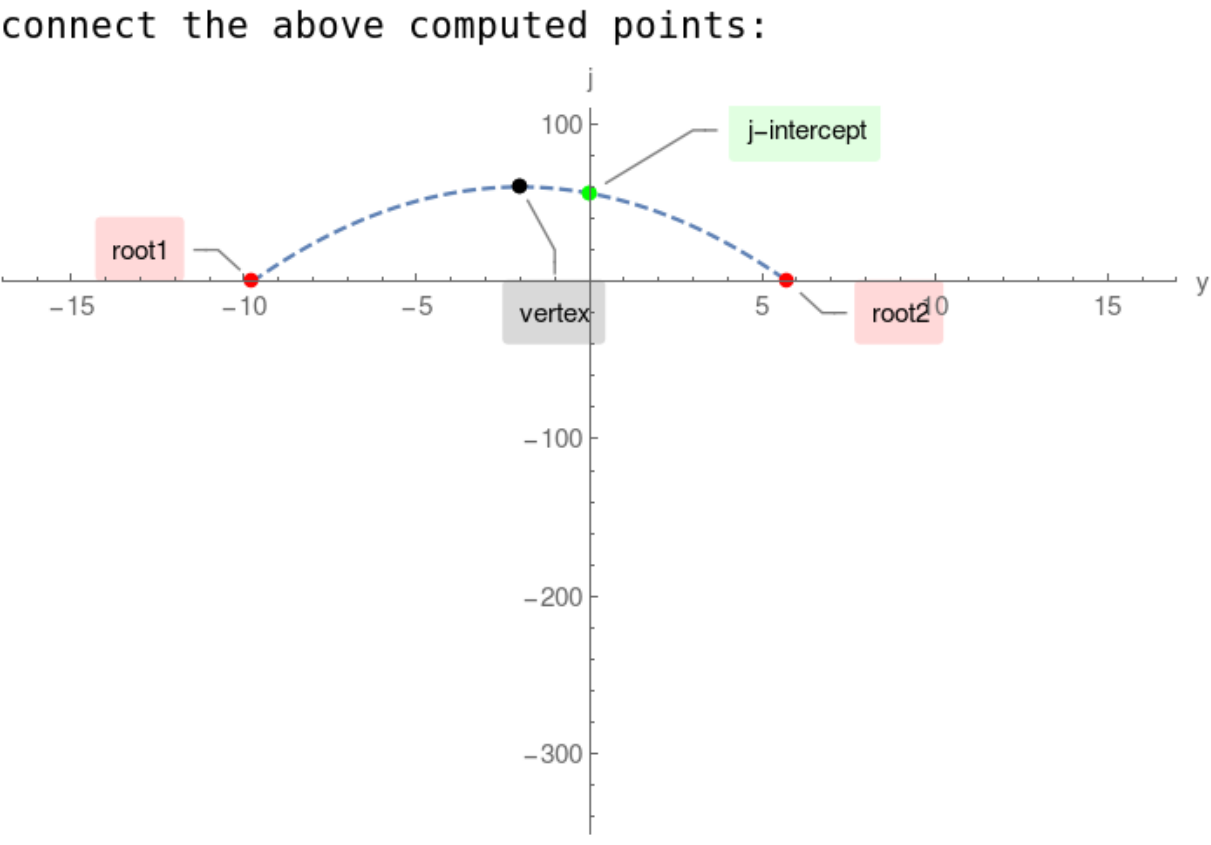
Compute y-intercepts by solving $-y^2 - 4y + 56 = 0$:

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



Step 4.

connect the above computed points:



Step 5.

Extend the parabola beyond the range of intercepts