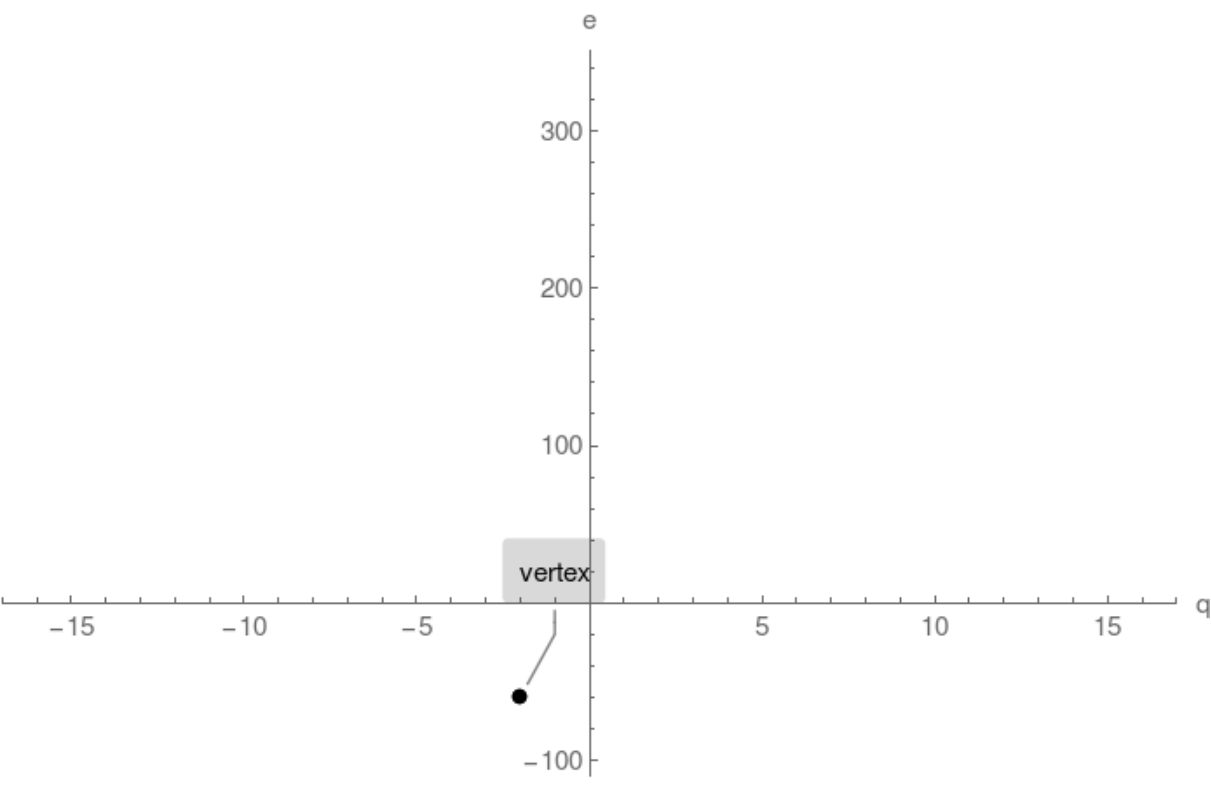
Example 1. 2 horizontal intercepts found

Plot $e(q) = q^2 + 4q - 56$

Step 1.

Compute vertex and plot single point:

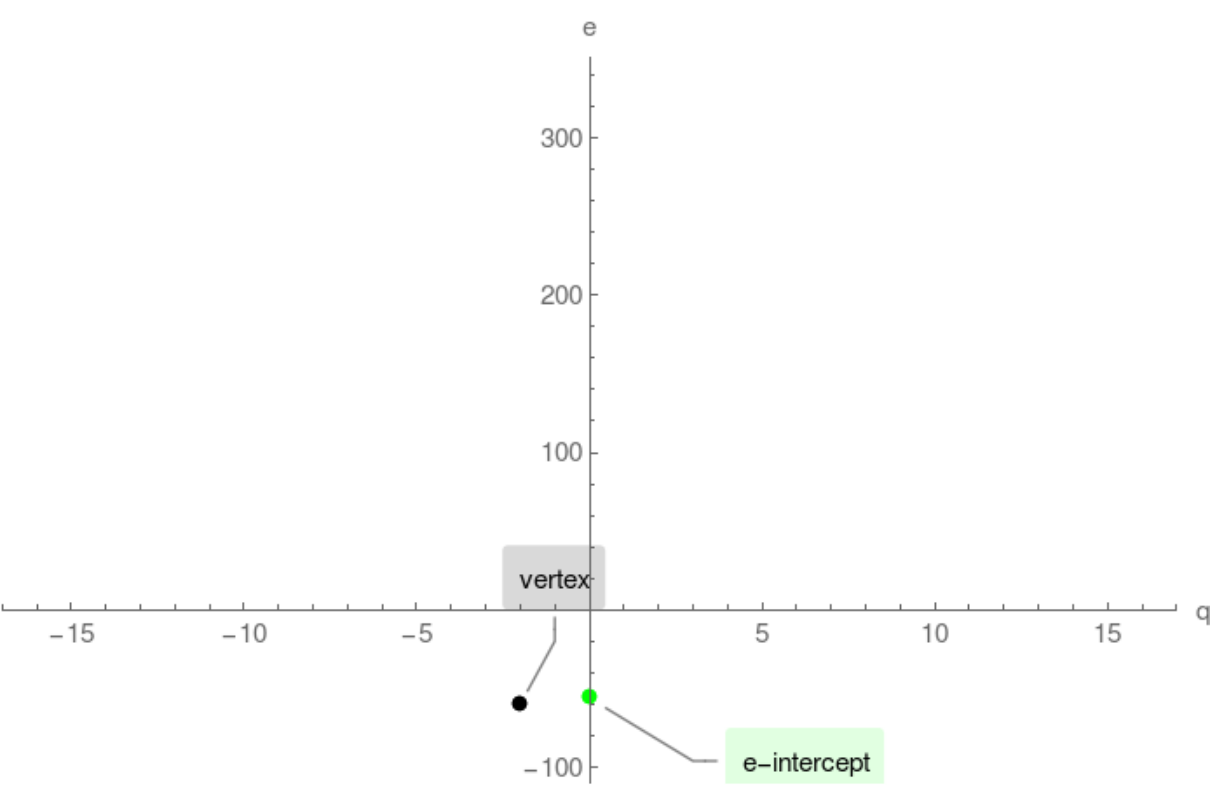
vertex $= (-2, -60)$



Step 2.

Compute e-intercept and plot single point:

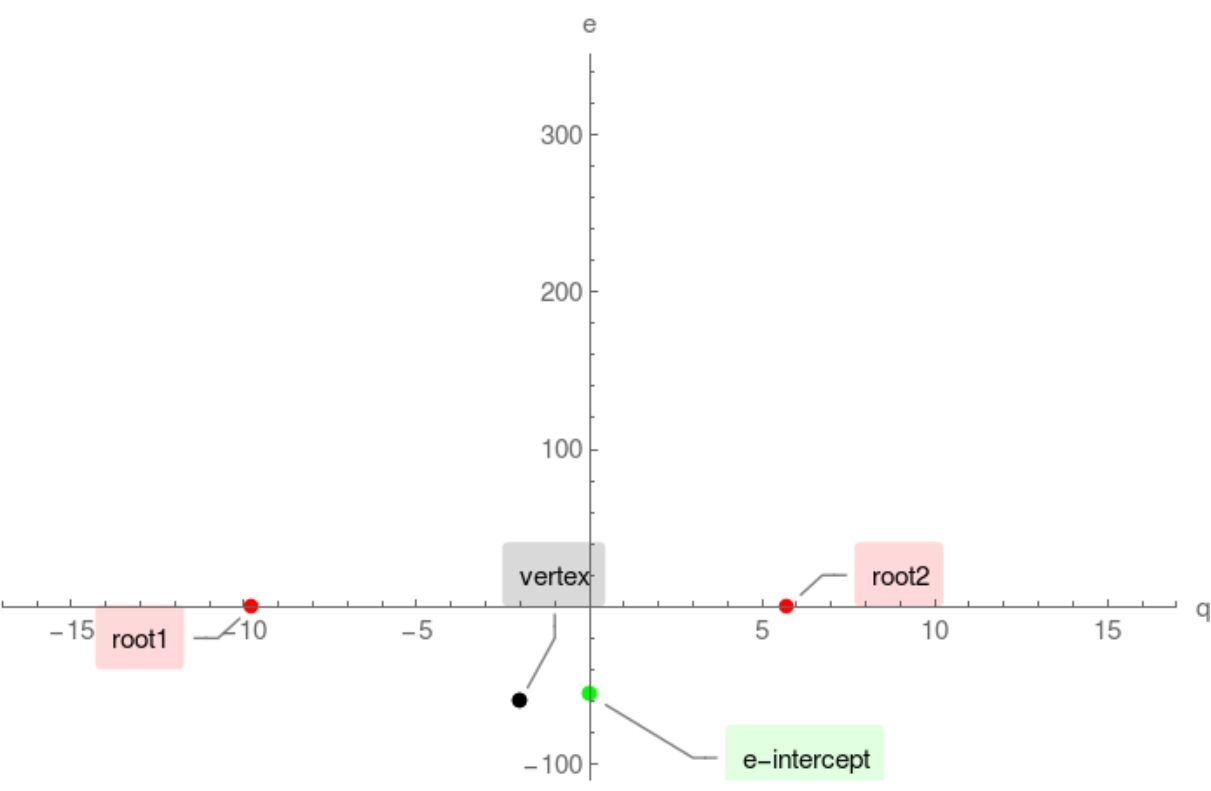
e-intercept $= (0, -56)$



Step 3.

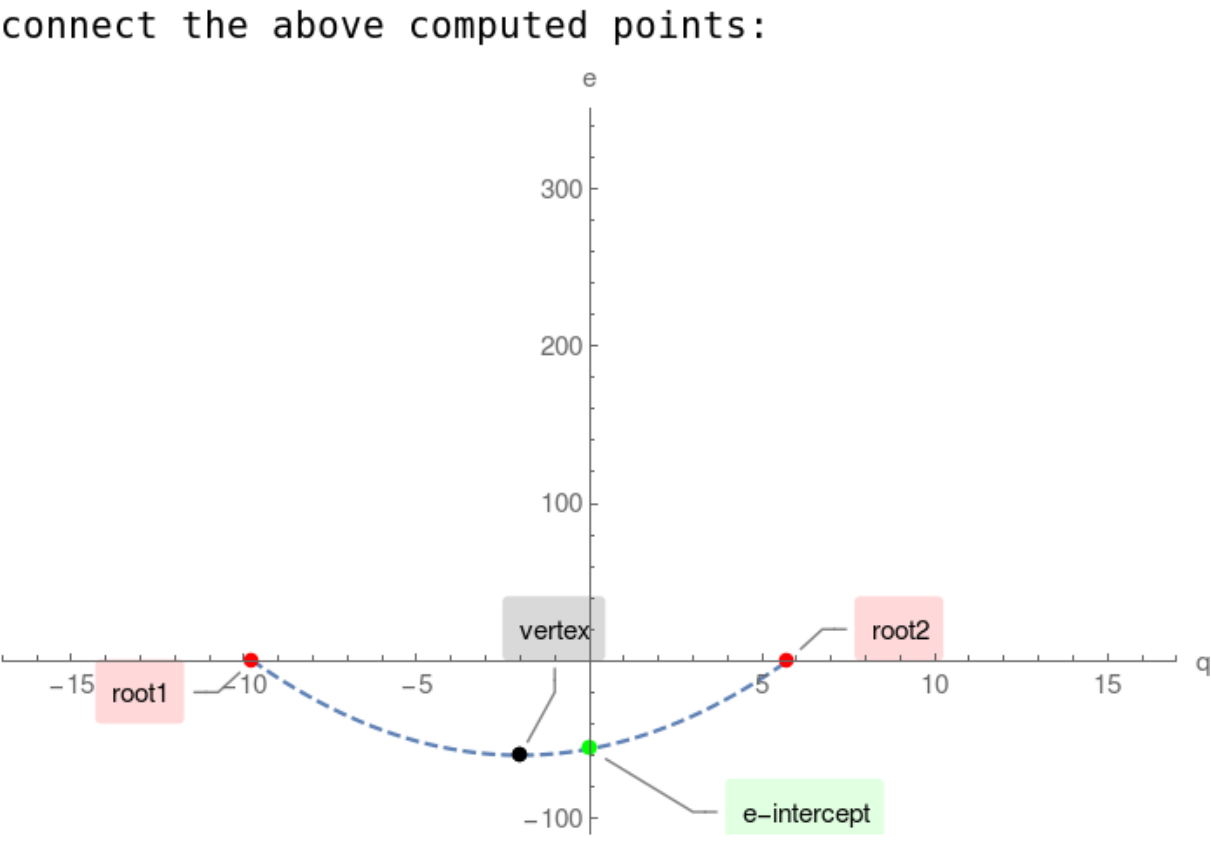
Compute q-intercepts by solving $q^2 + 4q - 56 = 0$:

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



Step 4.

connect the above computed points:



Step 5.

Extend the parabola beyond the range of intercepts