

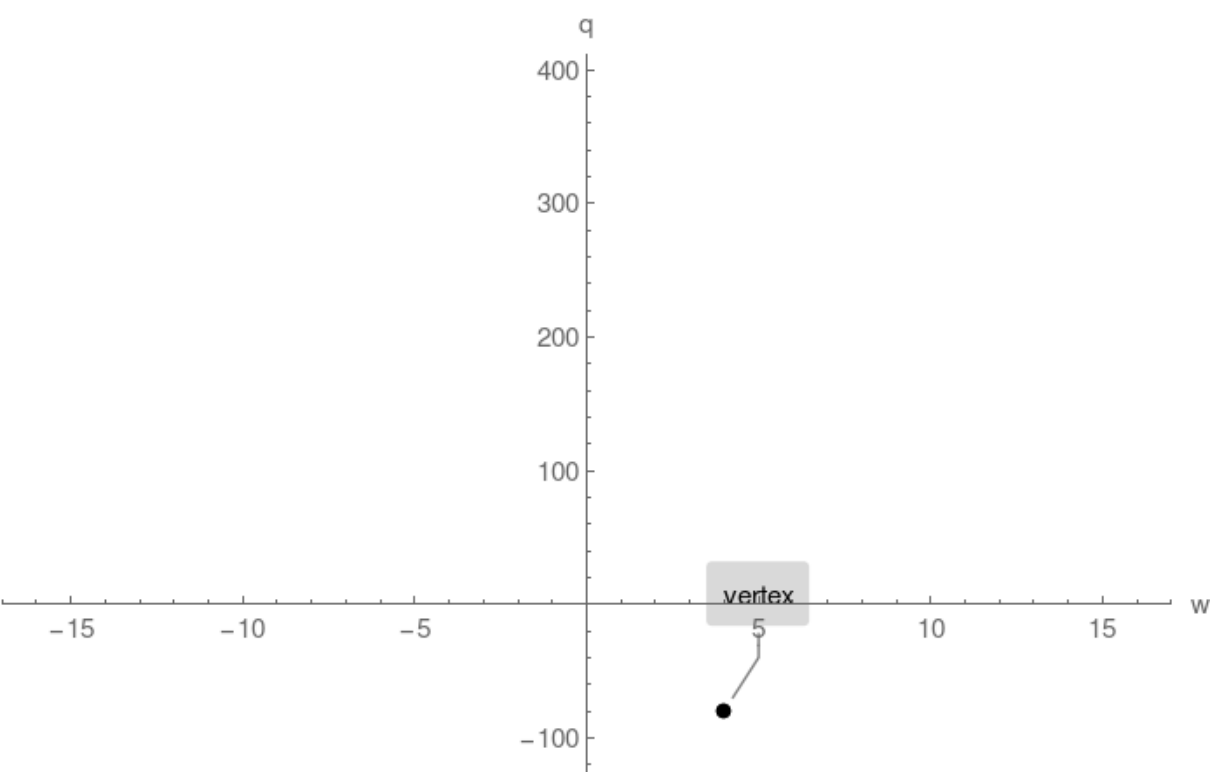
Example 1. 2 horizontal intercepts found

Plot $q(w) = w^2 - 8w - 64$

Step 1.

Compute vertex and plot single point:

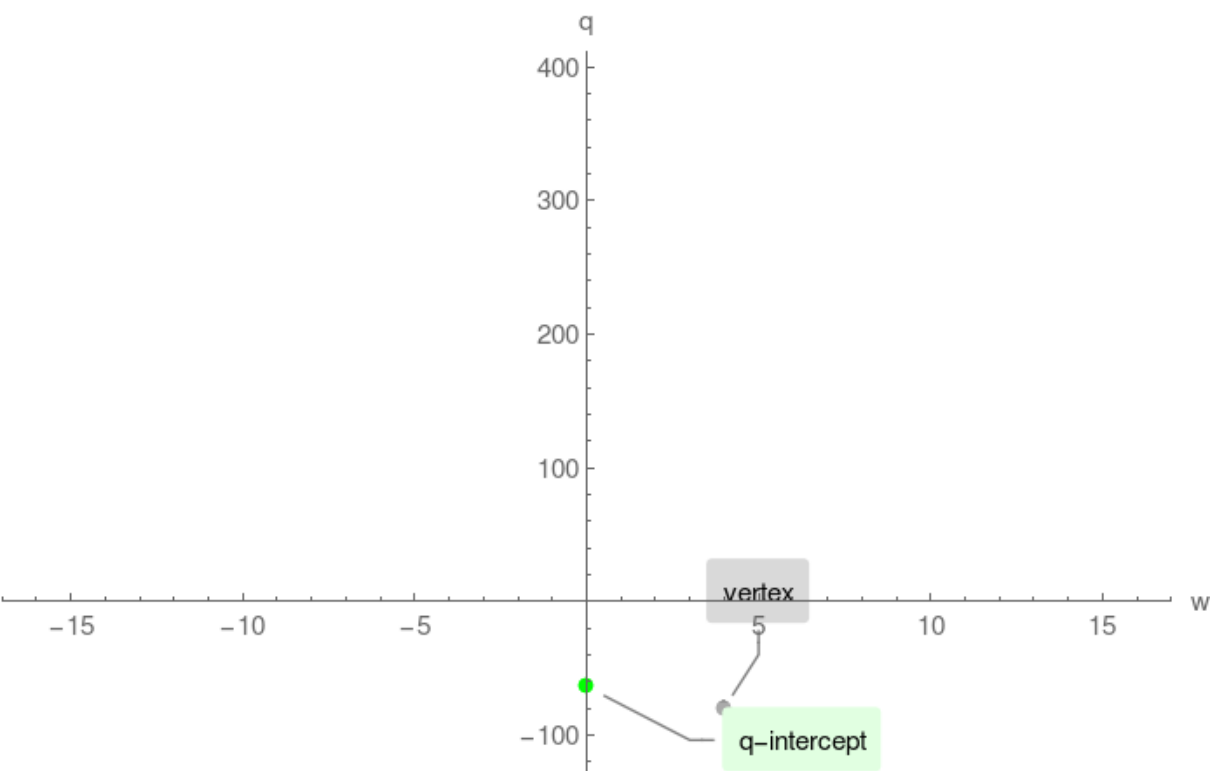
vertex = $(4, -80)$



Step 2.

Compute q-intercept and plot single point:

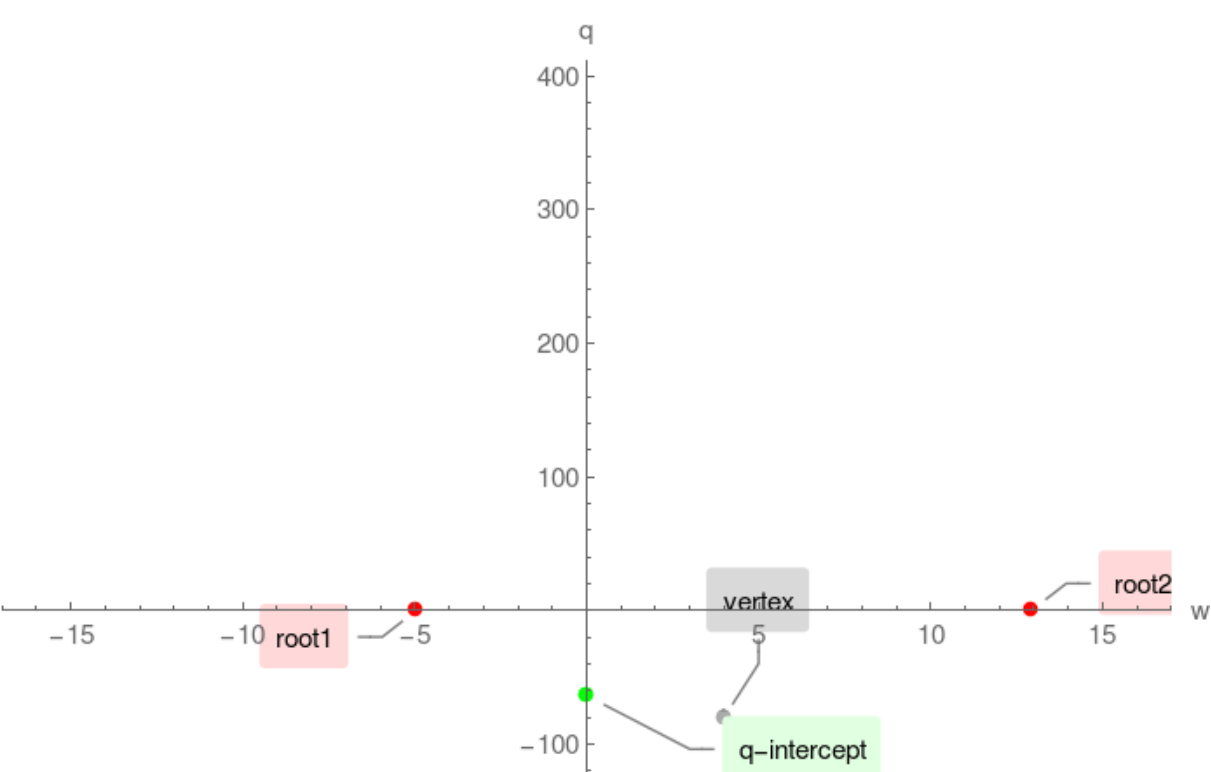
q-intercept = $(0, -64)$



Step 3.

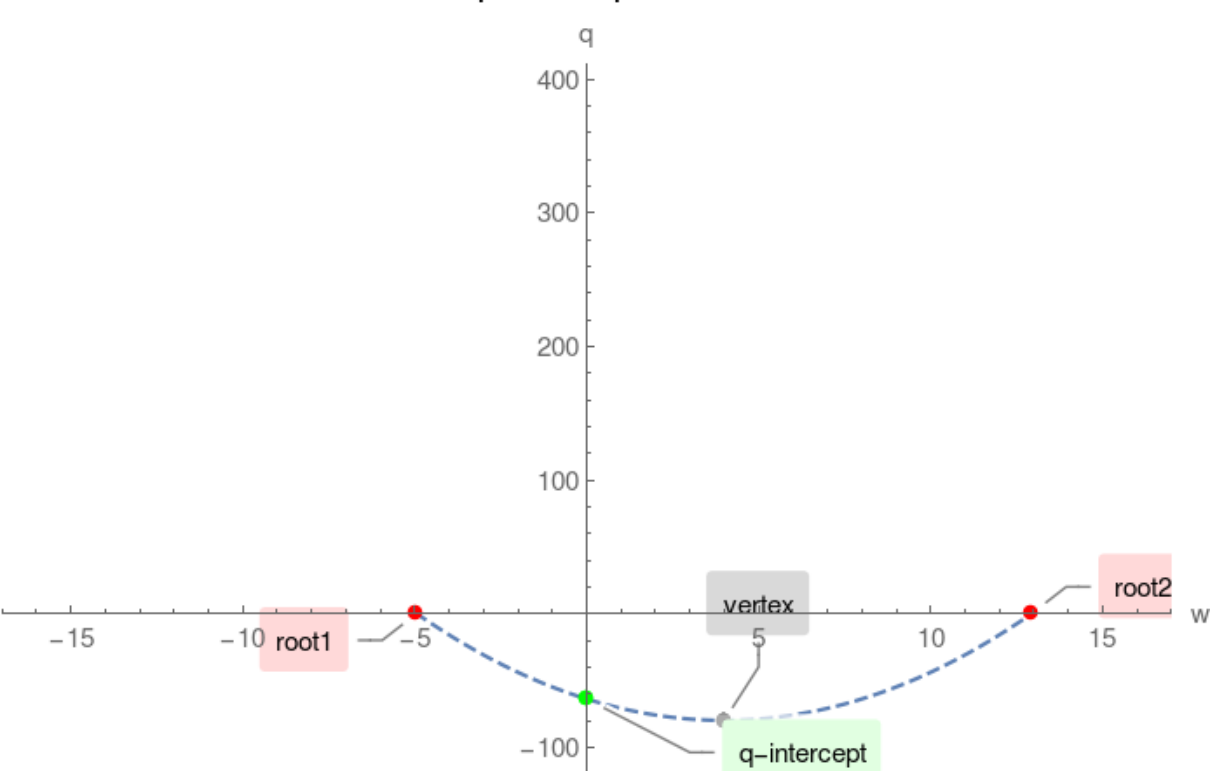
Compute w-intercepts by solving $w^2 - 8w - 64 = 0$:

$(4 - 4\sqrt{5}, 0)$, $(4 + 4\sqrt{5}, 0)$



Step 4.

connect the above computed points:



Step 5.

Extend the parabola beyond the range of intercepts

