

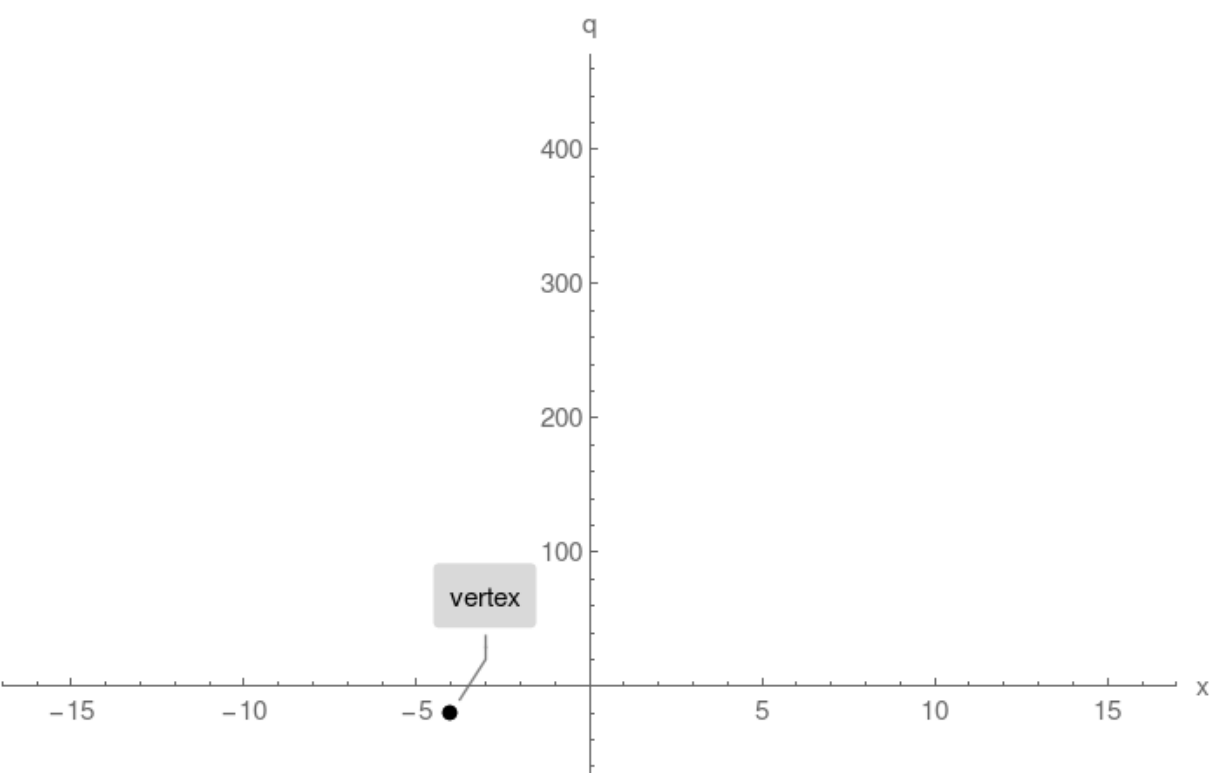
Example 1. 2 horizontal intercepts found

Plot $q(x) = x^2 + 8x - 4$

Step 1.

Compute vertex and plot single point:

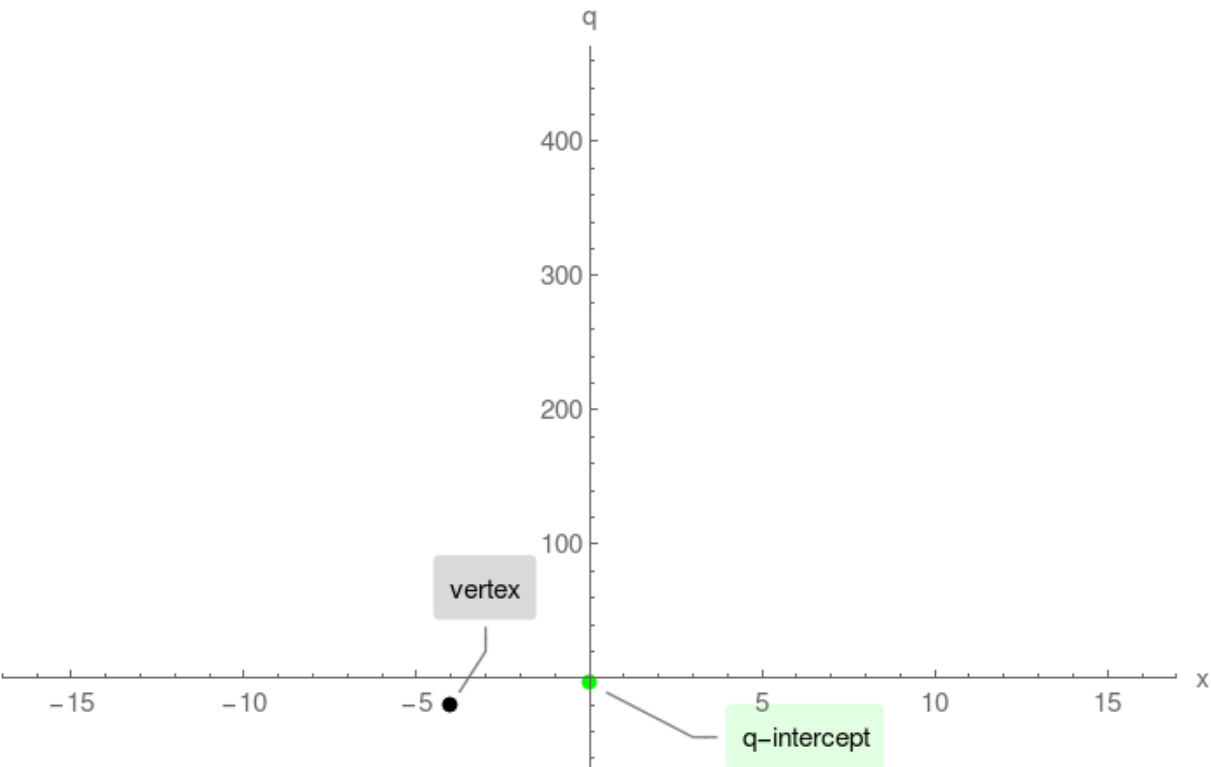
vertex = $(-4, -20)$



Step 2.

Compute q-intercept and plot single point:

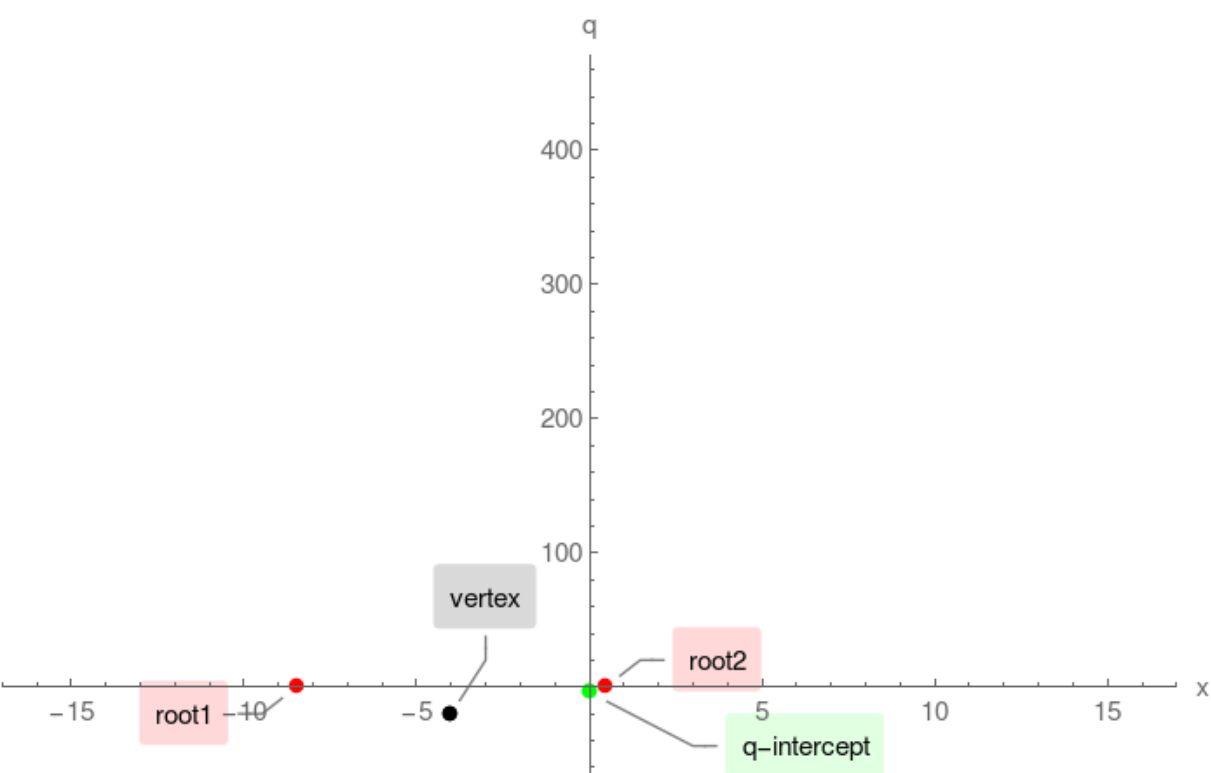
q-intercept = $(0, -4)$



Step 3.

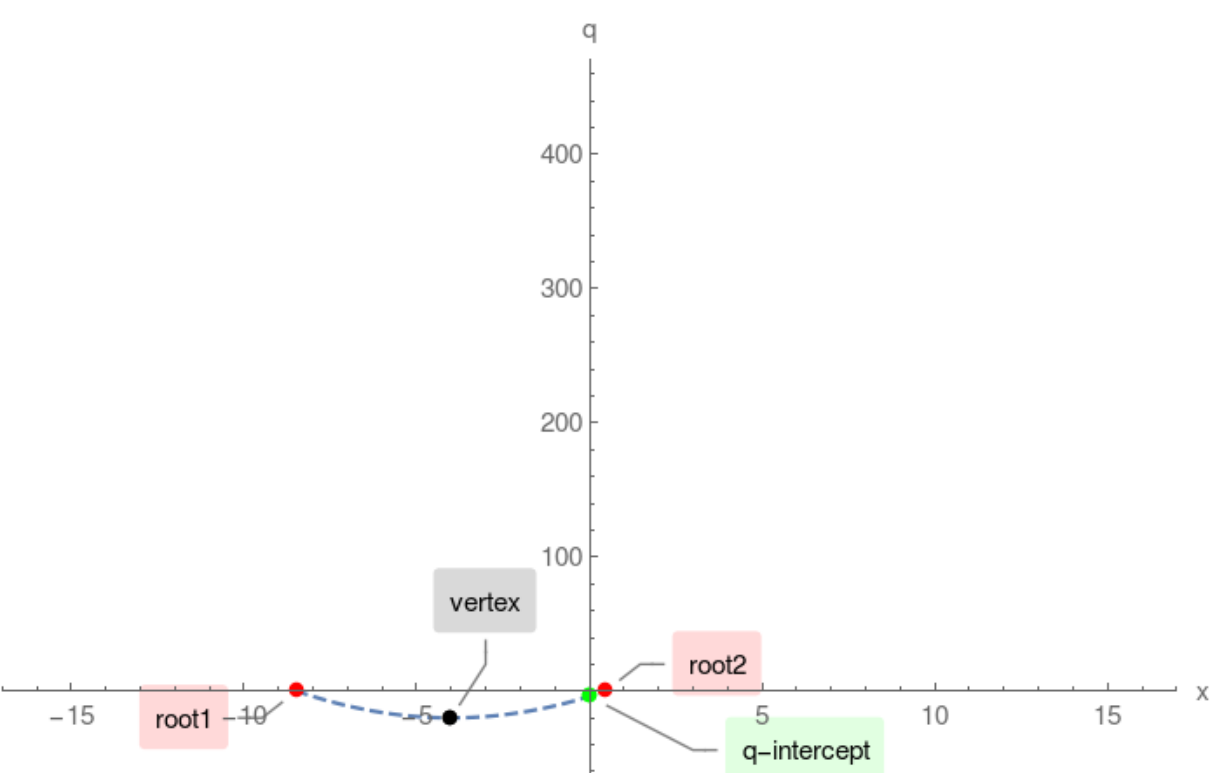
Compute x-intercepts by solving $x^2 + 8x - 4 = 0$:

$(-4 - 2\sqrt{5}, 0)$, $(-4 + 2\sqrt{5}, 0)$



Step 4.

connect the above computed points:



Step 5.

Extend the parabola beyond the range of intercepts

