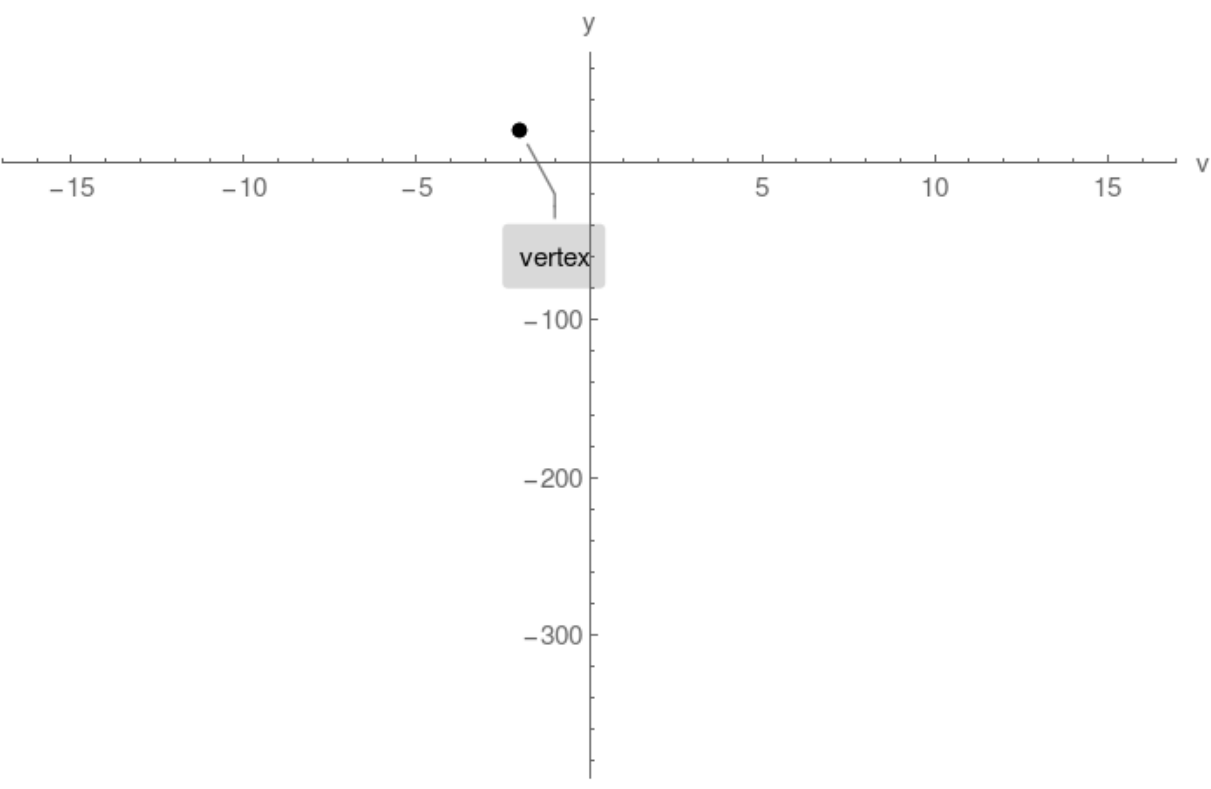
Example 1. 2 horizontal intercepts found

Plot $y(v) = -v^2 - 4v + 16$

Step 1.

Compute vertex and plot single point:

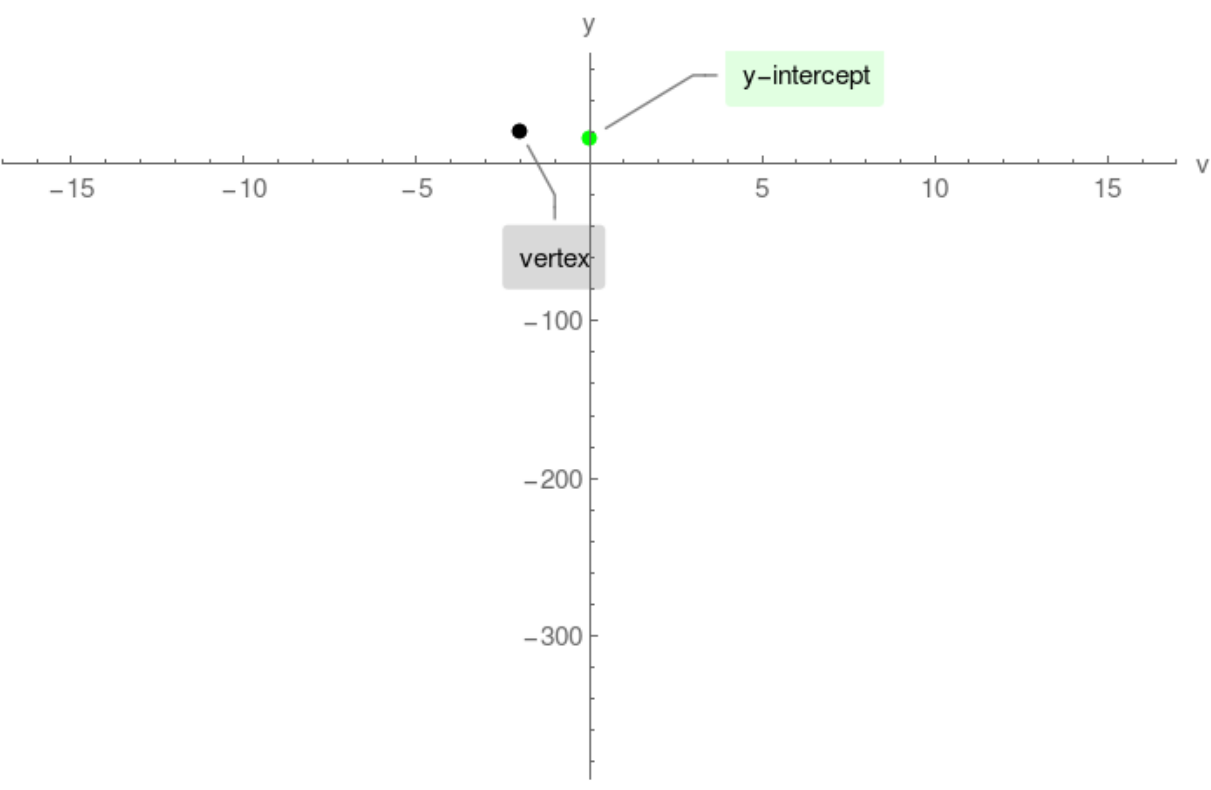
vertex $= (-2, 20)$



Step 2.

Compute y-intercept and plot single point:

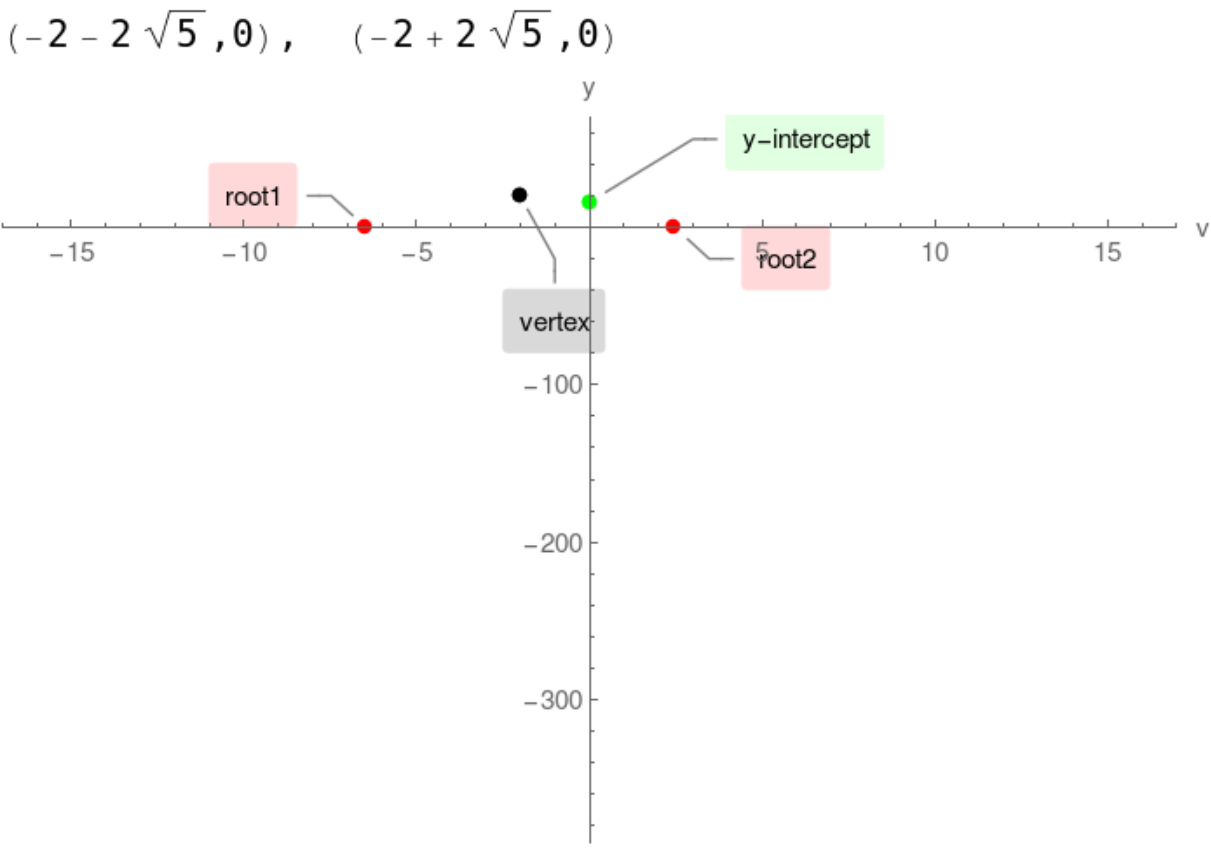
y-intercept $= (0, 16)$



Step 3.

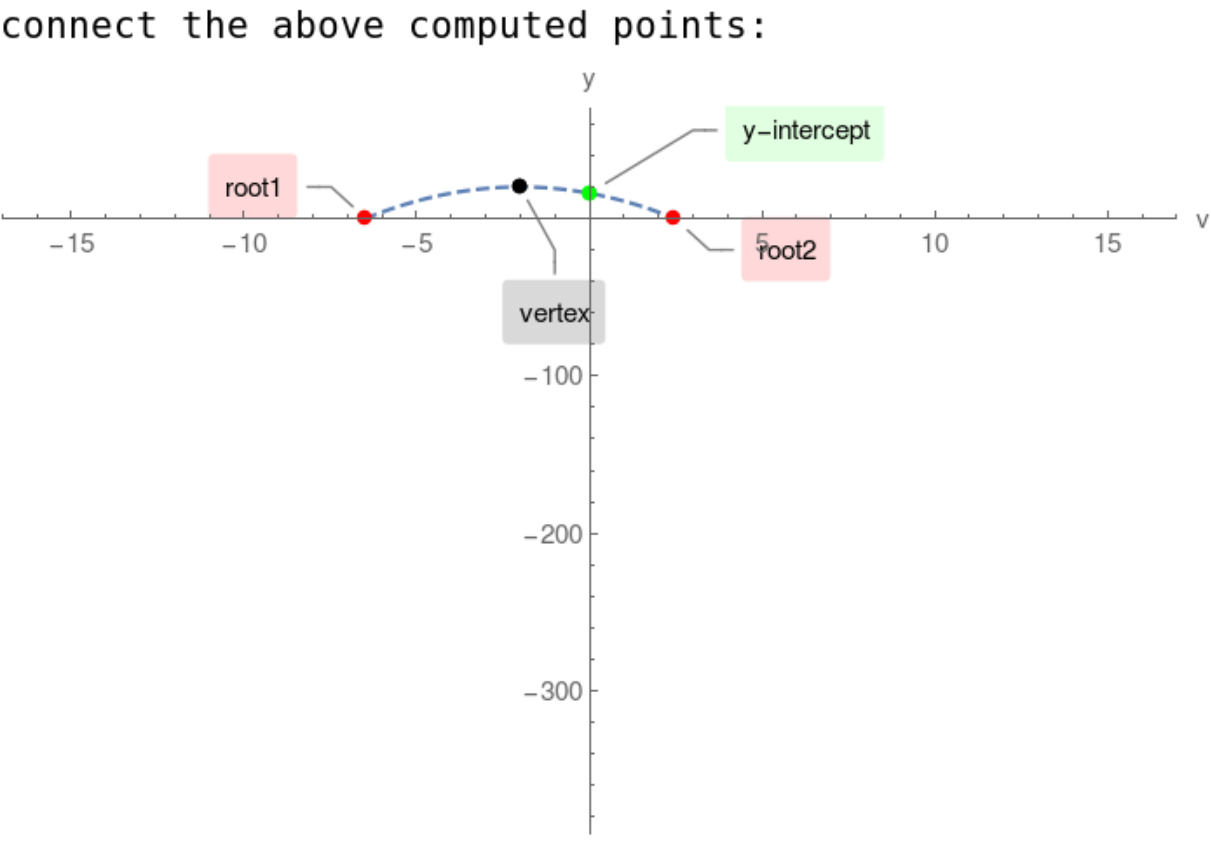
Compute v-intercepts by solving $-v^2 - 4v + 16 = 0$:

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



Step 4.

connect the above computed points:



Step 5.

Extend the parabola beyond the range of intercepts