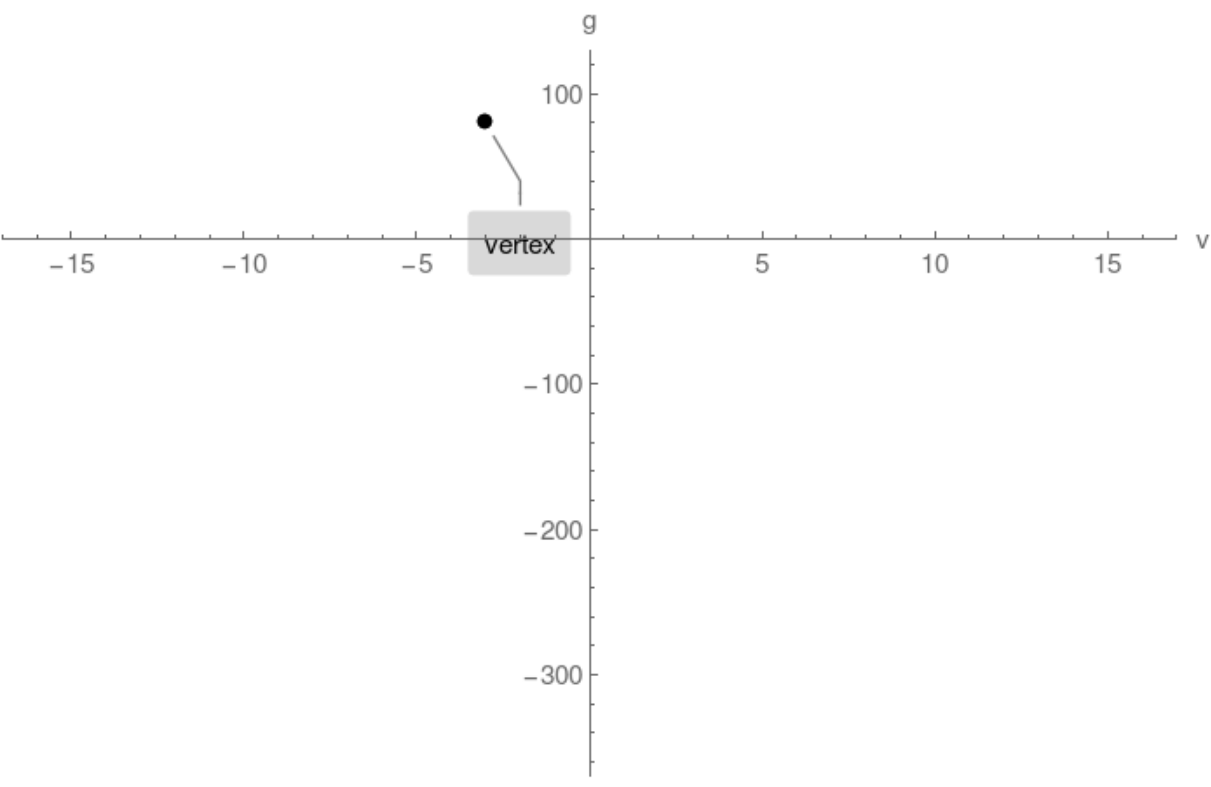
Example 1. 2 horizontal intercepts found

Plot $g(v) = -v^2 - 6v + 71$

Step 1.

Compute vertex and plot single point:

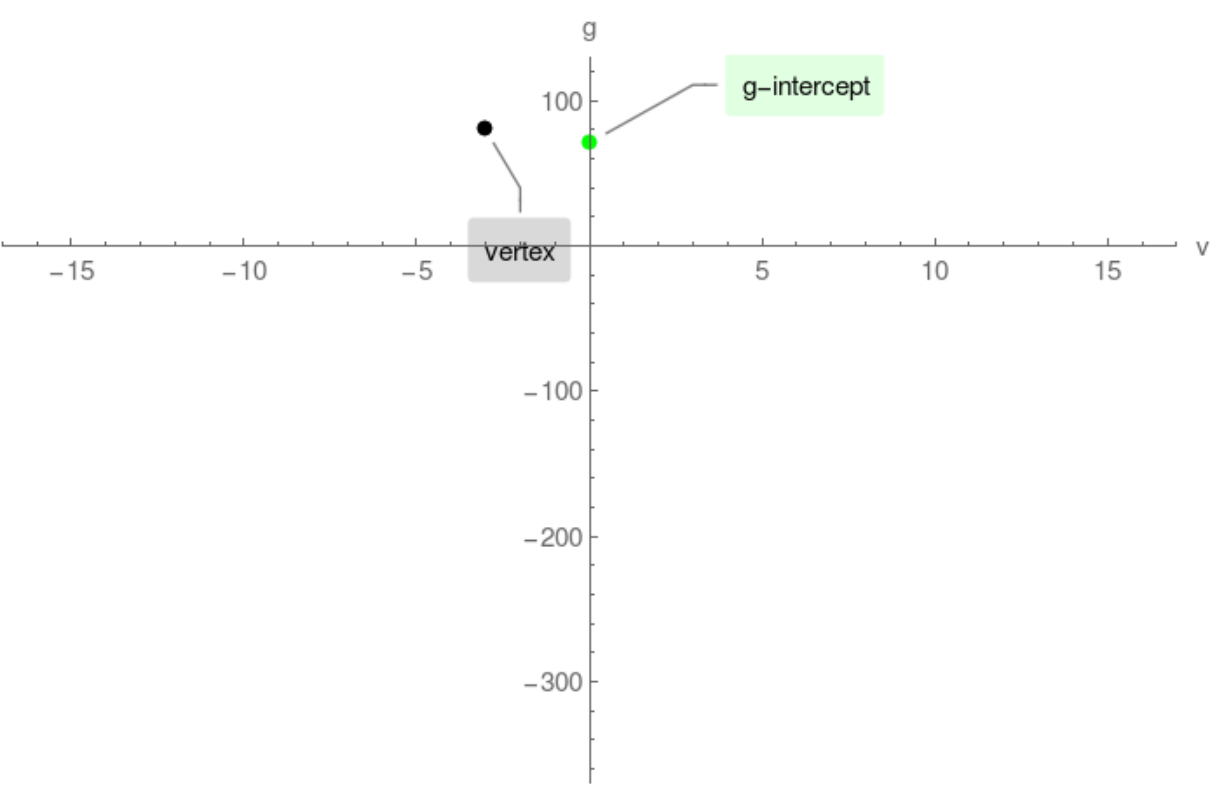
vertex $= (-3, 80)$



Step 2.

Compute g-intercept and plot single point:

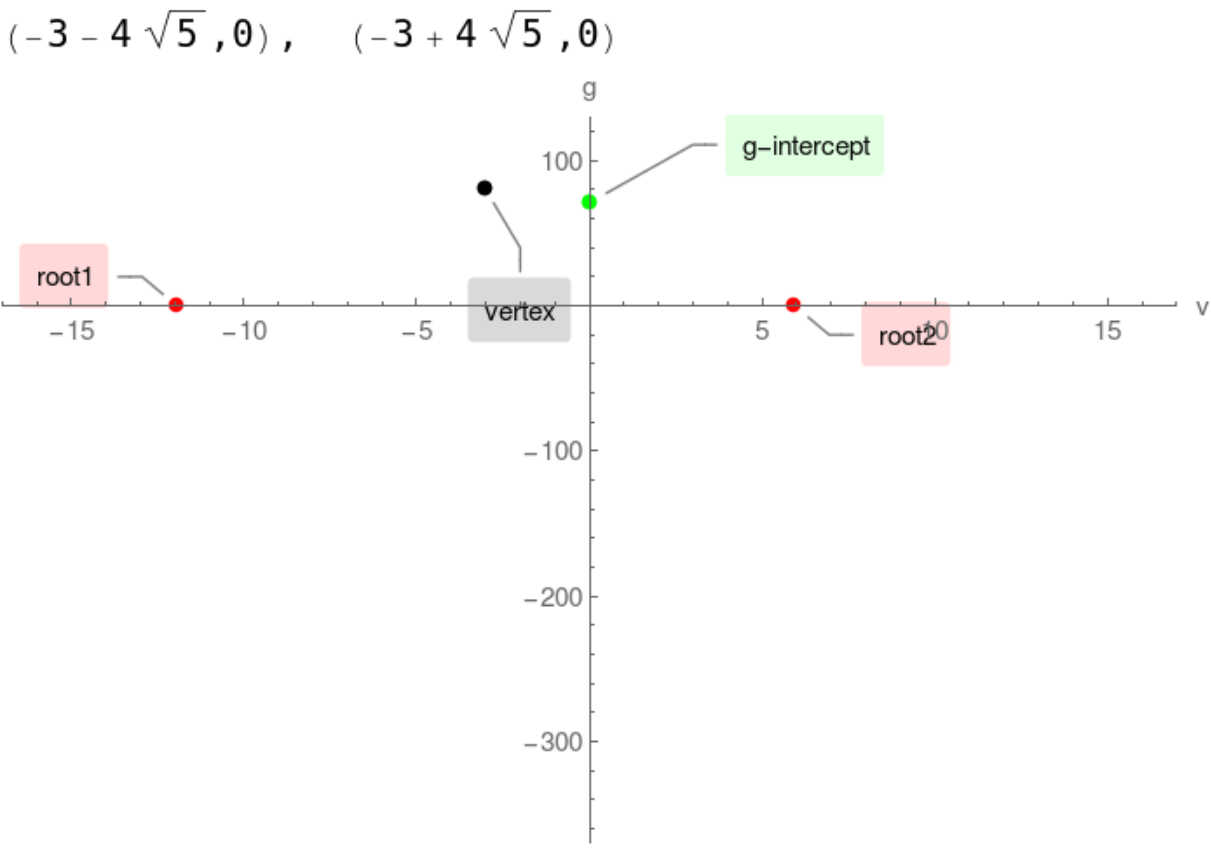
g-intercept $= (0, 71)$



Step 3.

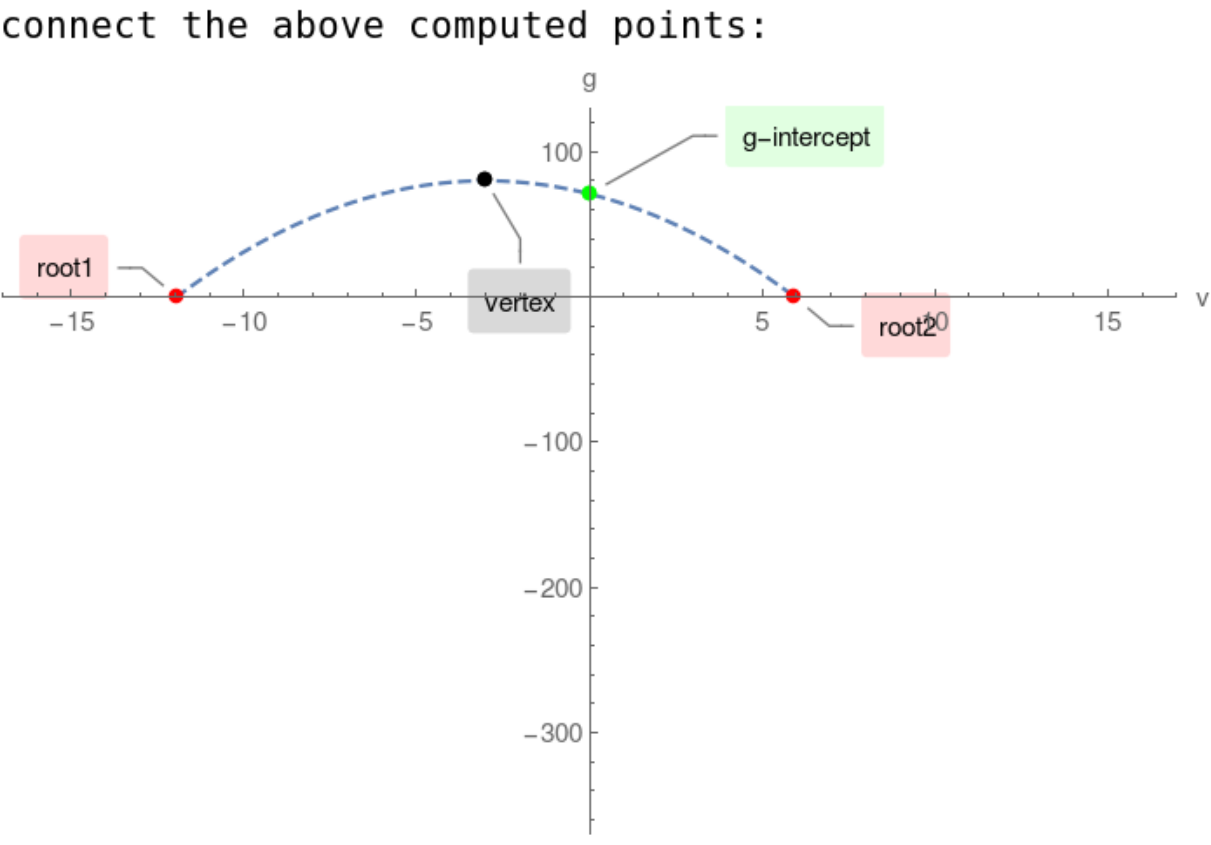
Compute v-intercepts by solving $-v^2 - 6v + 71 = 0$:

$(-3 - 4\sqrt{5}, 0)$, $(-3 + 4\sqrt{5}, 0)$



Step 4.

connect the above computed points:



Step 5.

Extend the parabola beyond the range of intercepts