

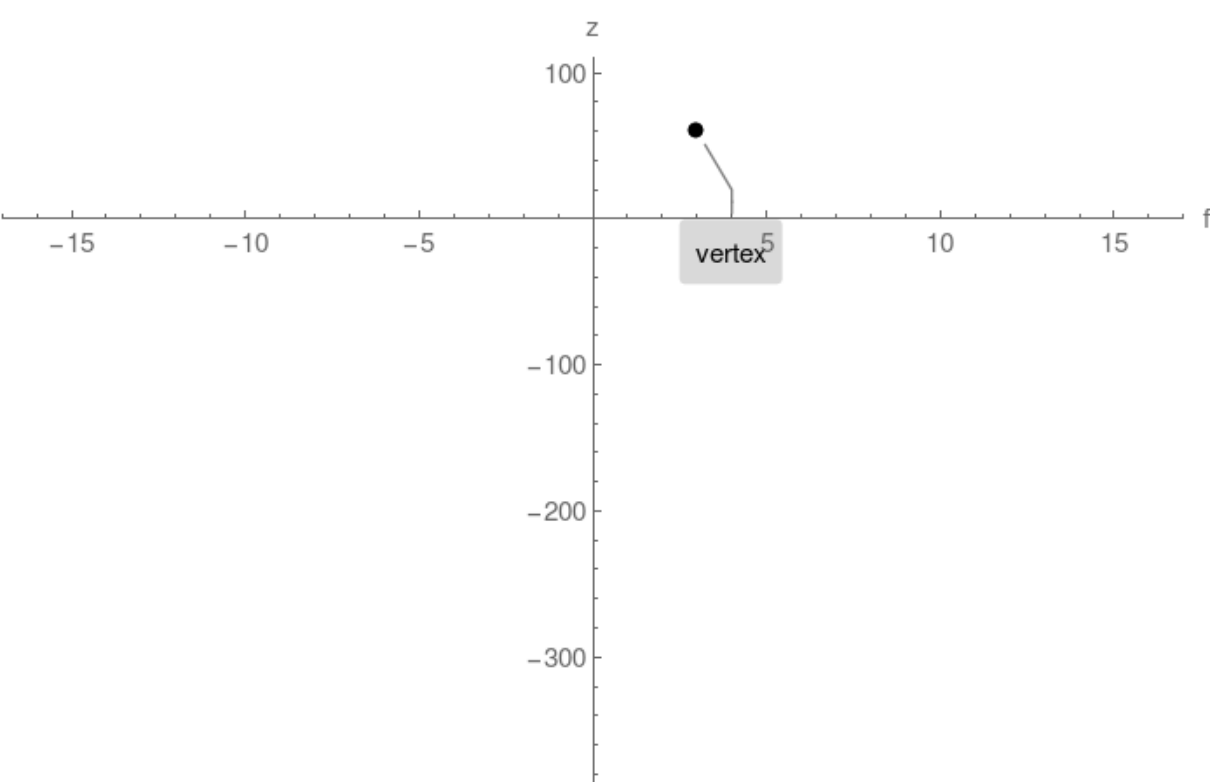
Example 1. 2 horizontal intercepts found

Plot $z(f) = -f^2 + 6f + 51$

Step 1.

Compute vertex and plot single point:

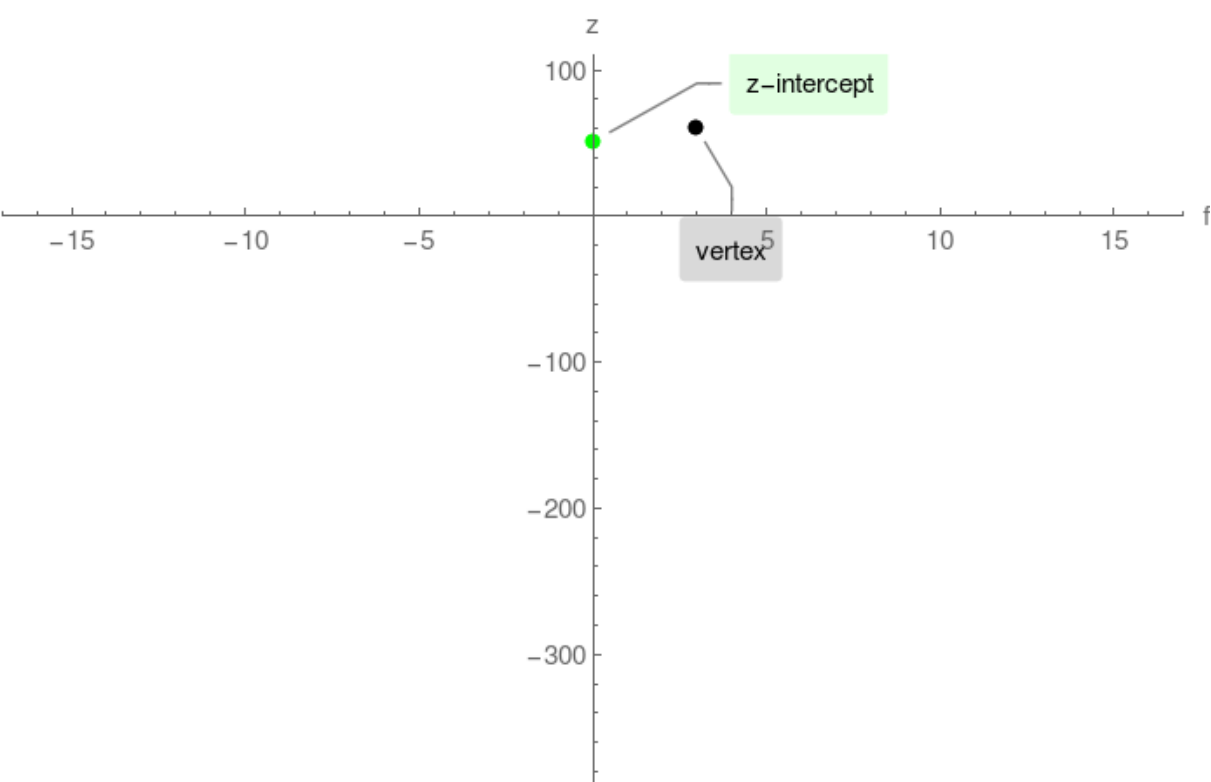
vertex = (3, 60)



Step 2.

Compute z-intercept and plot single point:

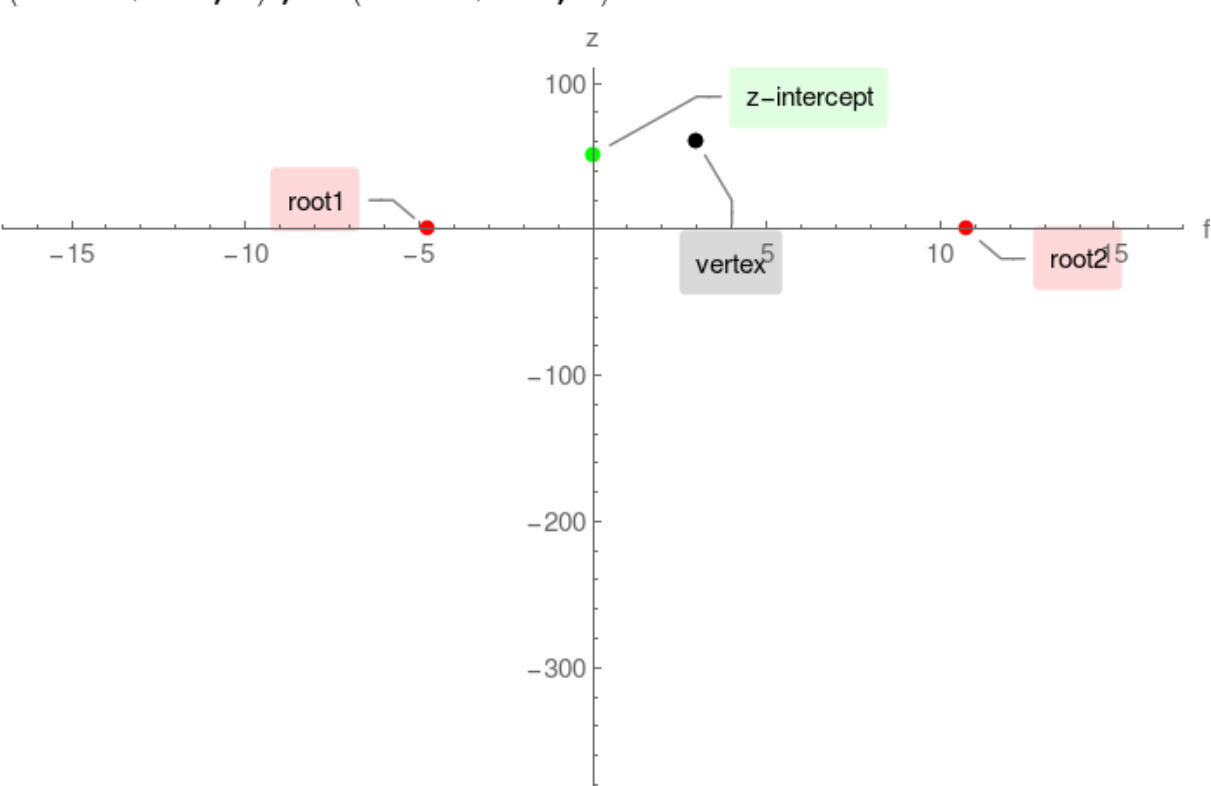
z-intercept = (0, 51)



Step 3.

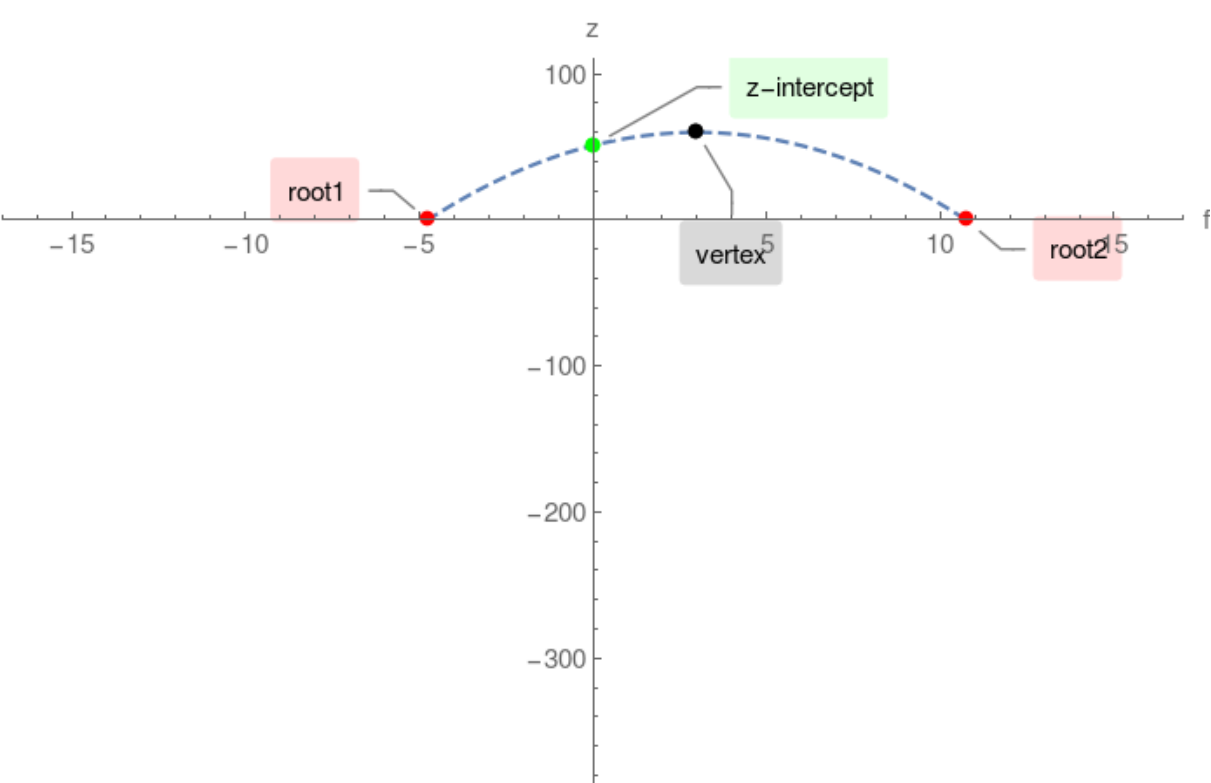
Compute f-intercepts by solving $-f^2 + 6f + 51 = 0$:

$(3 - 2\sqrt{15}, 0)$, $(3 + 2\sqrt{15}, 0)$



Step 4.

connect the above computed points:



Step 5.

Extend the parabola beyond the range of intercepts

