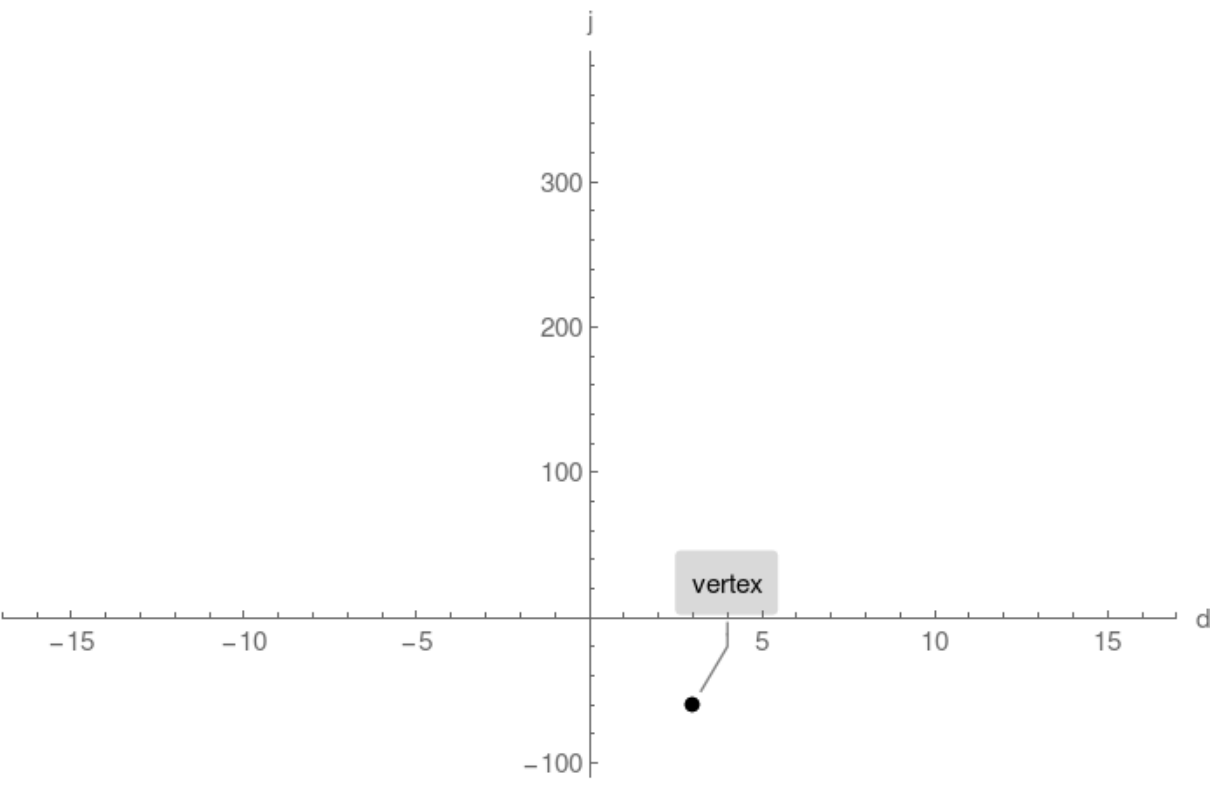
Example 1. 2 horizontal intercepts found

Plot $j(d) = d^2 - 6\,d - 51$

Step 1.

Compute vertex and plot single point:

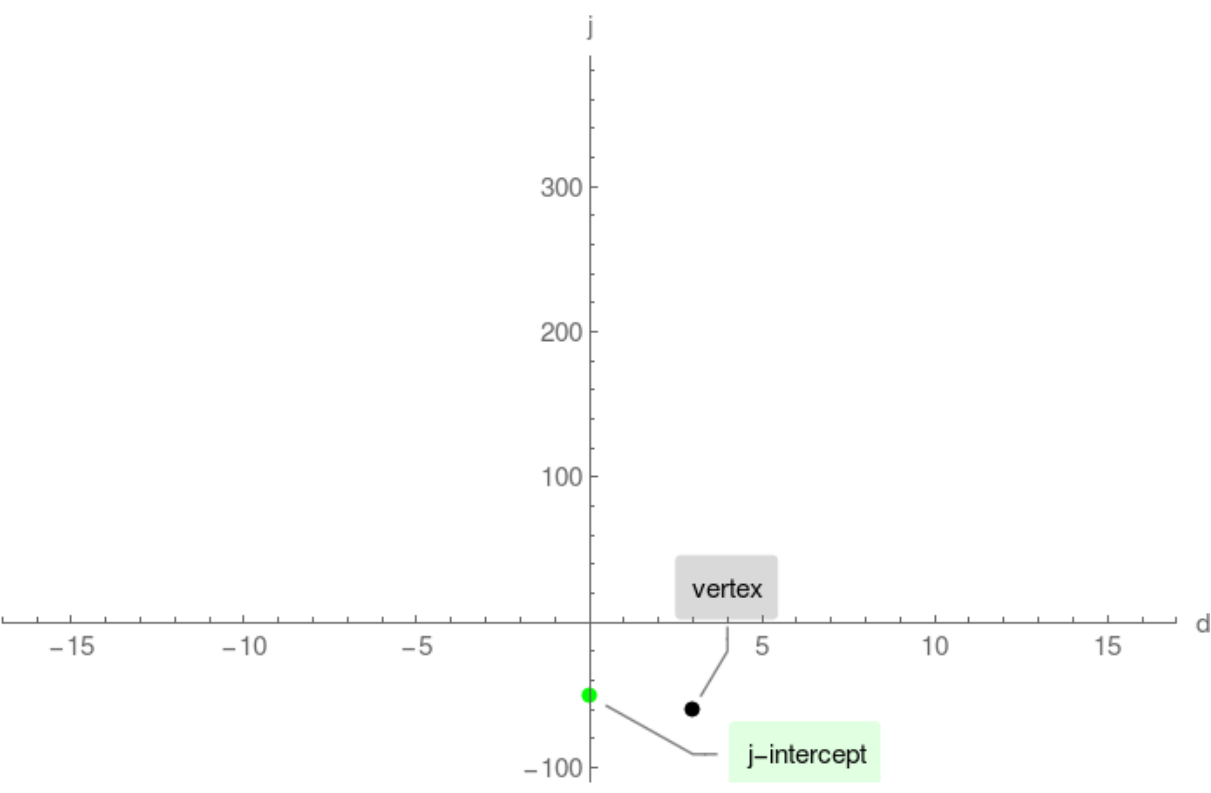
vertex $= (3, -60)$



Step 2.

Compute j−intercept and plot single point:

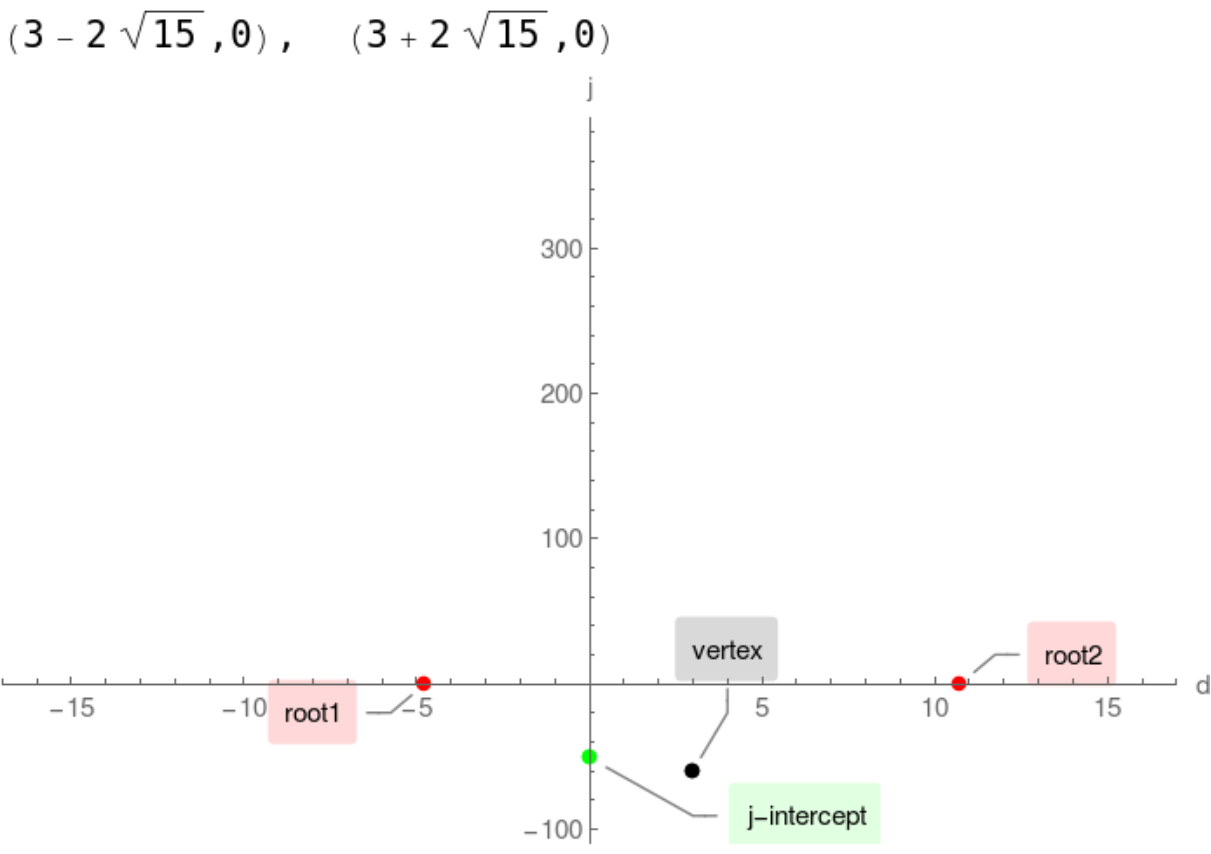
j−intercept $= (0, -51)$



Step 3.

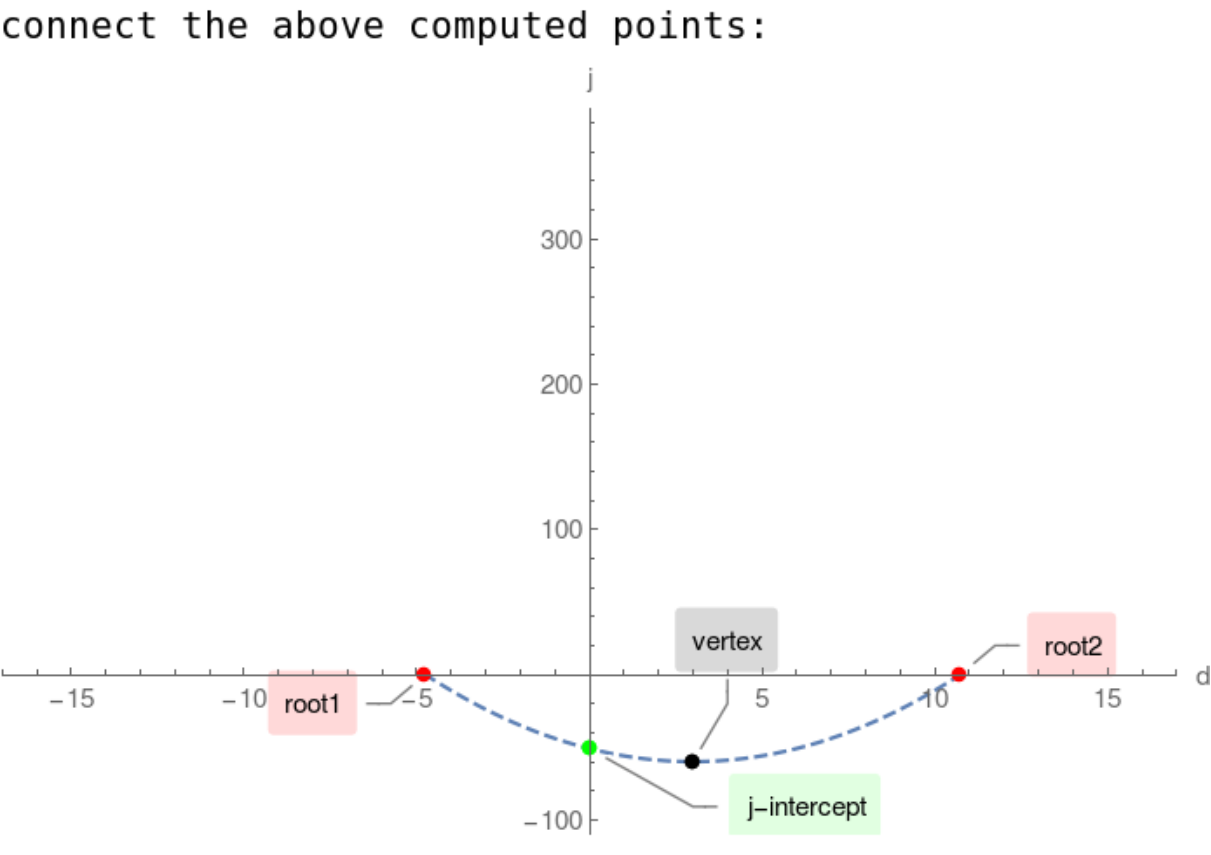
Compute d−intercepts by solving $d^2 - 6\,d - 51 = 0$:

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



Step 4.

connect the above computed points:



Step 5.

Extend the parabola beyond the range of intercepts