

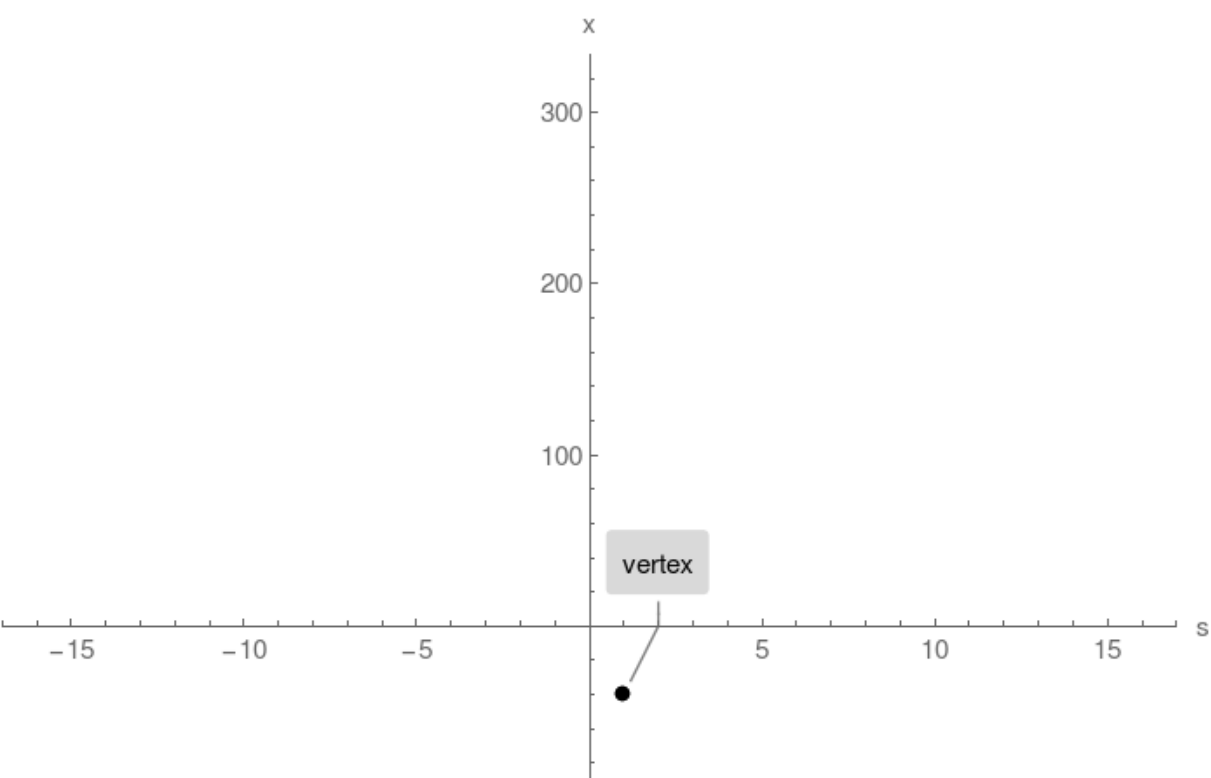
Example 1. 2 horizontal intercepts found

Plot $x(s) = s^2 - 2s - 39$

Step 1.

Compute vertex and plot single point:

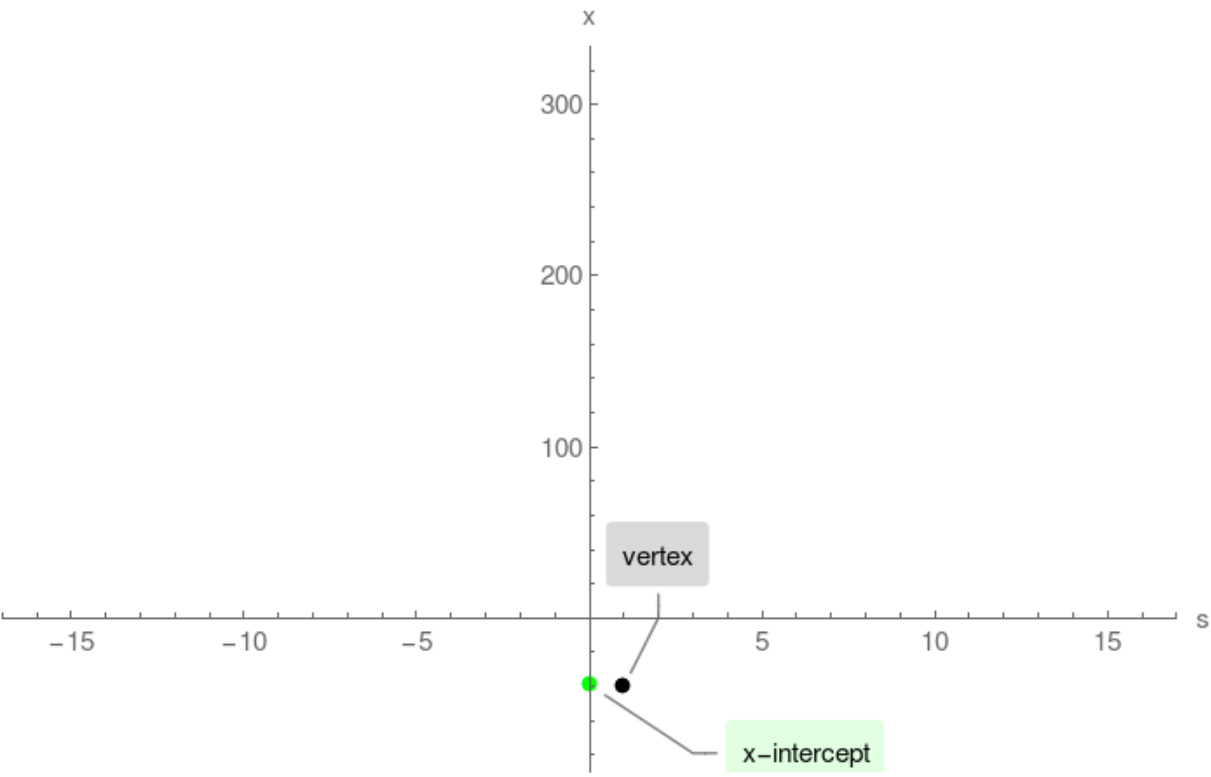
vertex = $(1, -40)$



Step 2.

Compute x-intercept and plot single point:

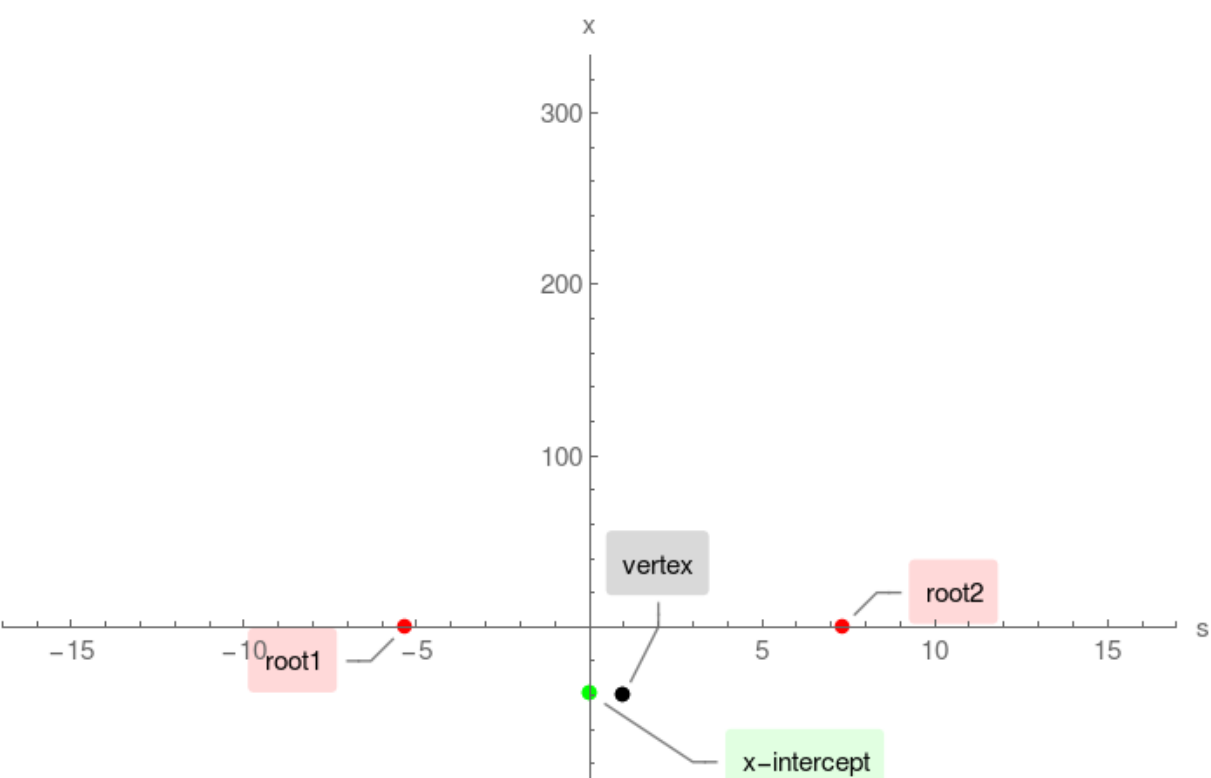
x-intercept = $(0, -39)$



Step 3.

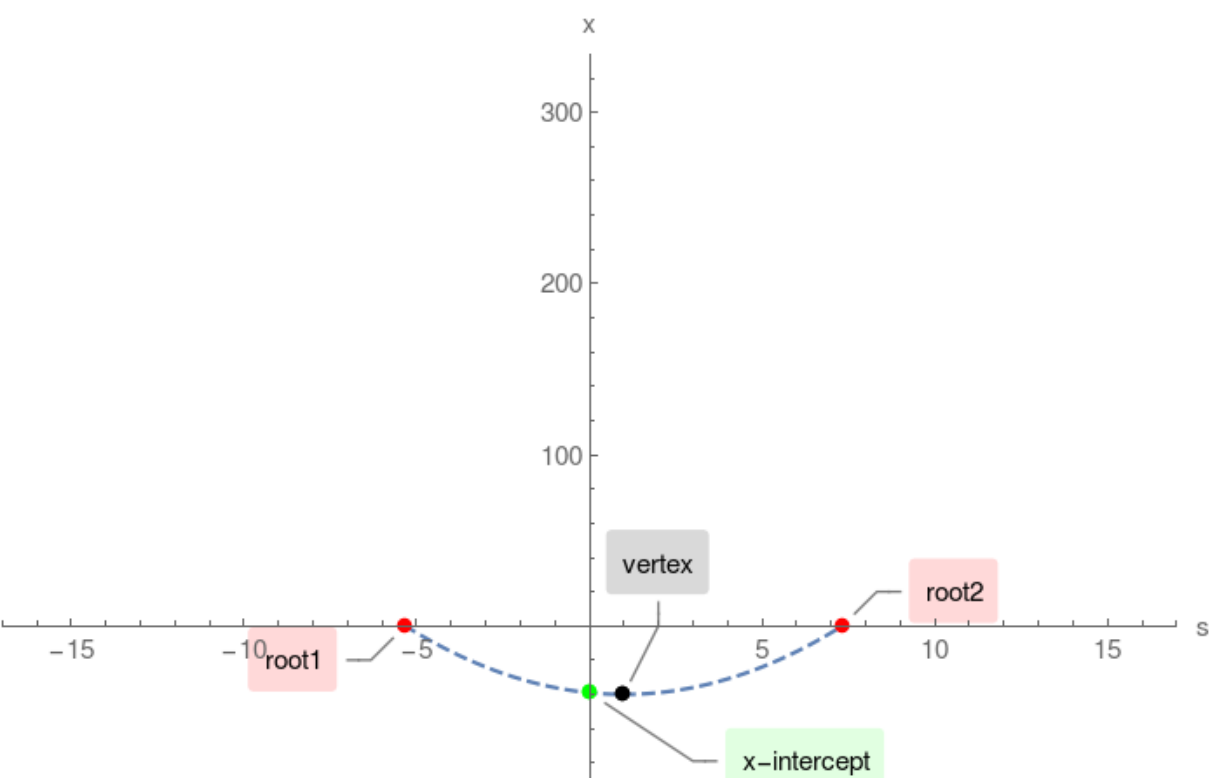
Compute s-intercepts by solving $s^2 - 2s - 39 = 0$:

$(1 - 2\sqrt{10}, 0)$, $(1 + 2\sqrt{10}, 0)$



Step 4.

connect the above computed points:



Step 5.

Extend the parabola beyond the range of intercepts

