

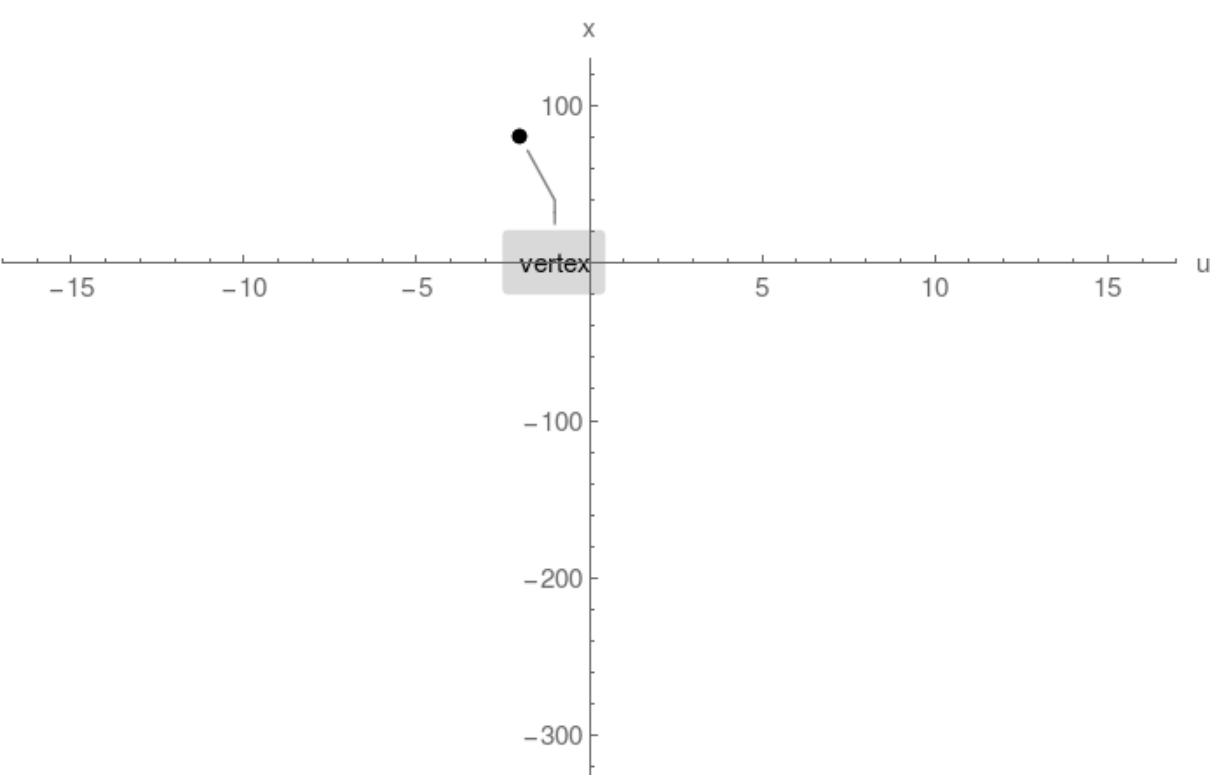
## Example 1. 2 horizontal intercepts found

Plot  $x(u) = -u^2 - 4u + 76$

### Step 1.

Compute vertex and plot single point:

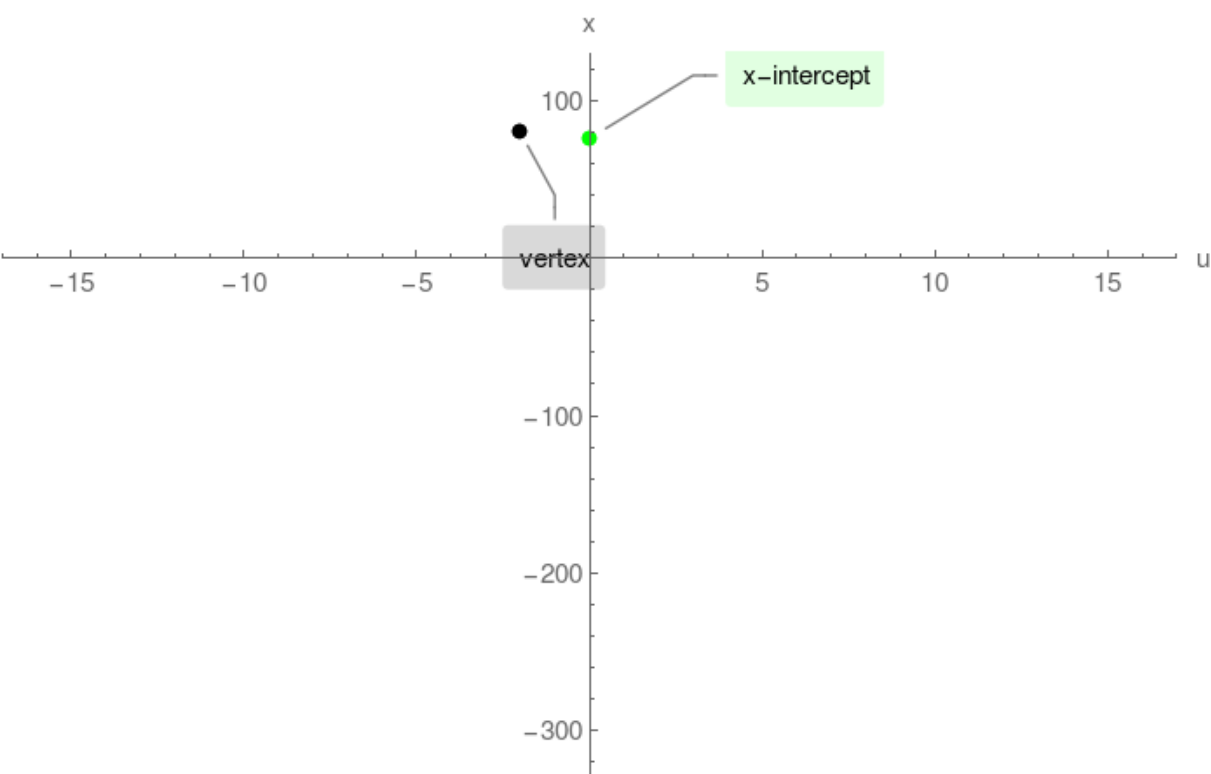
vertex =  $(-2, 80)$



### Step 2.

Compute x-intercept and plot single point:

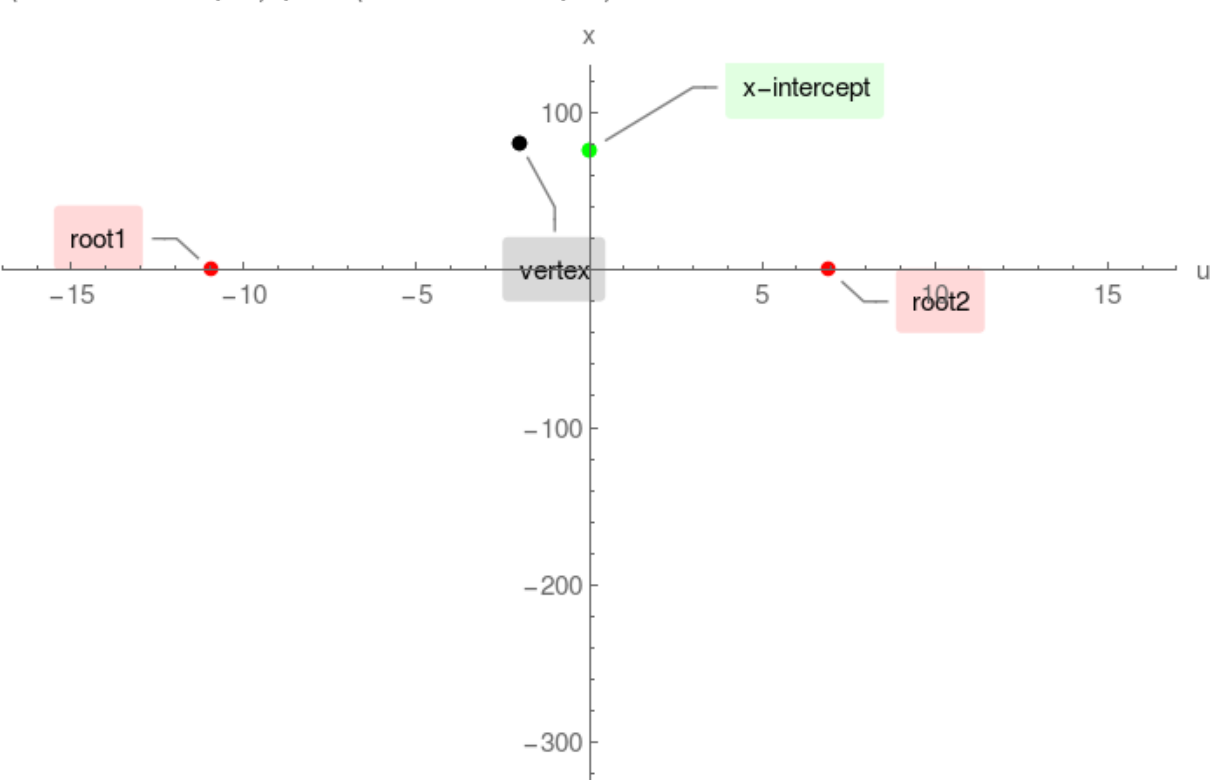
x-intercept =  $(0, 76)$



### Step 3.

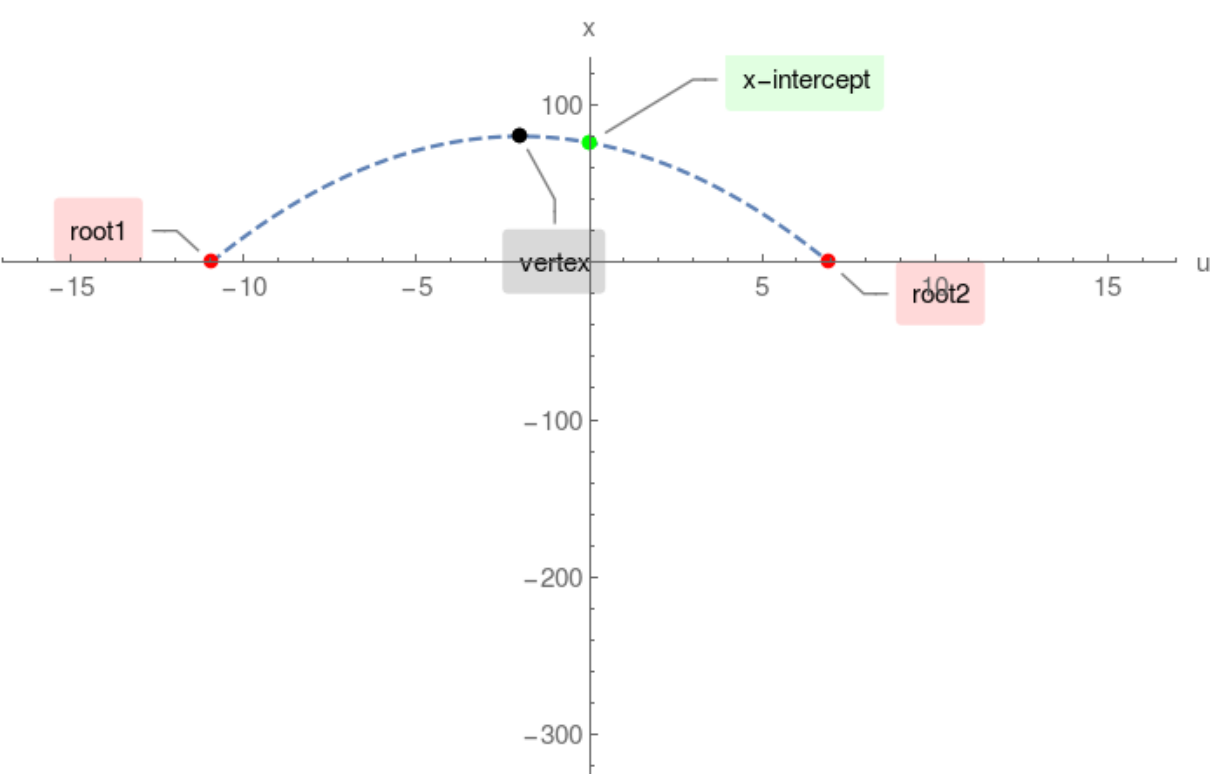
Compute u-intercepts by solving  $-u^2 - 4u + 76 = 0$ :

$(-2 - 4\sqrt{5}, 0)$ ,  $(-2 + 4\sqrt{5}, 0)$



### Step 4.

connect the above computed points:



### Step 5.

Extend the parabola beyond the range of intercepts

