

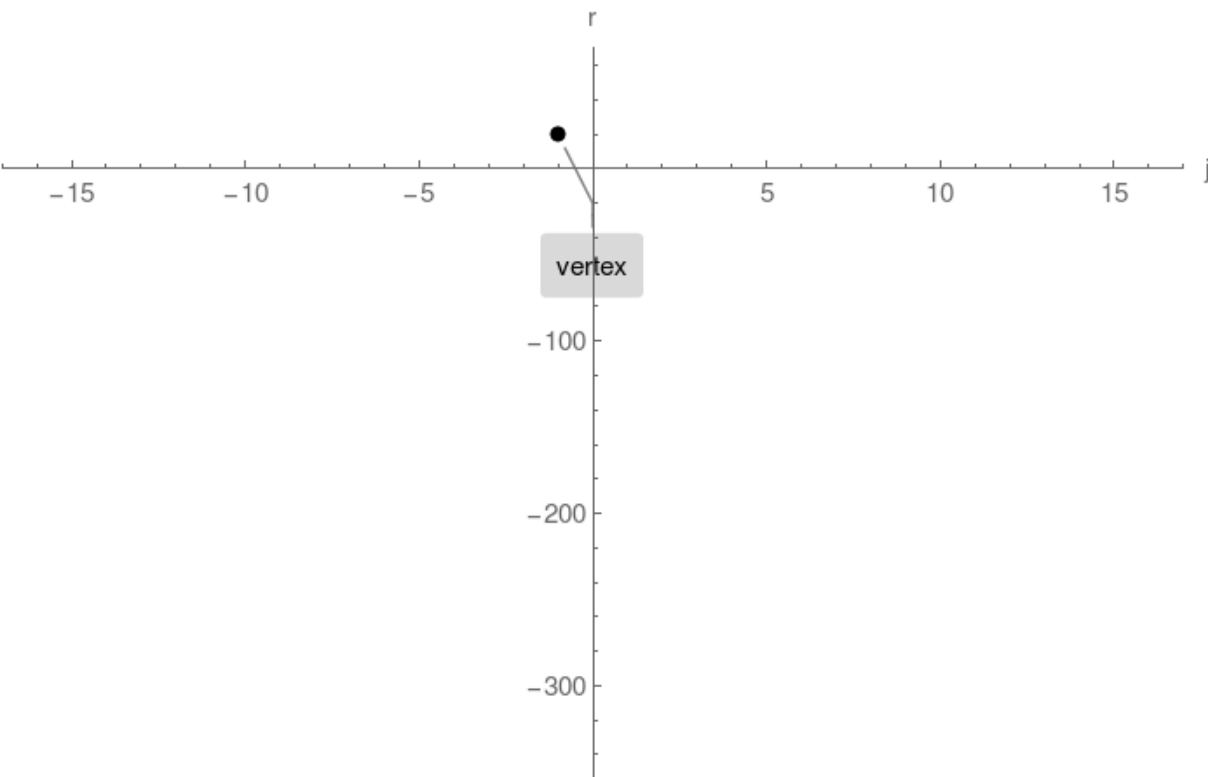
## Example 1. 2 horizontal intercepts found

Plot  $r(j) = -j^2 - 2j + 19$

### Step 1.

Compute vertex and plot single point:

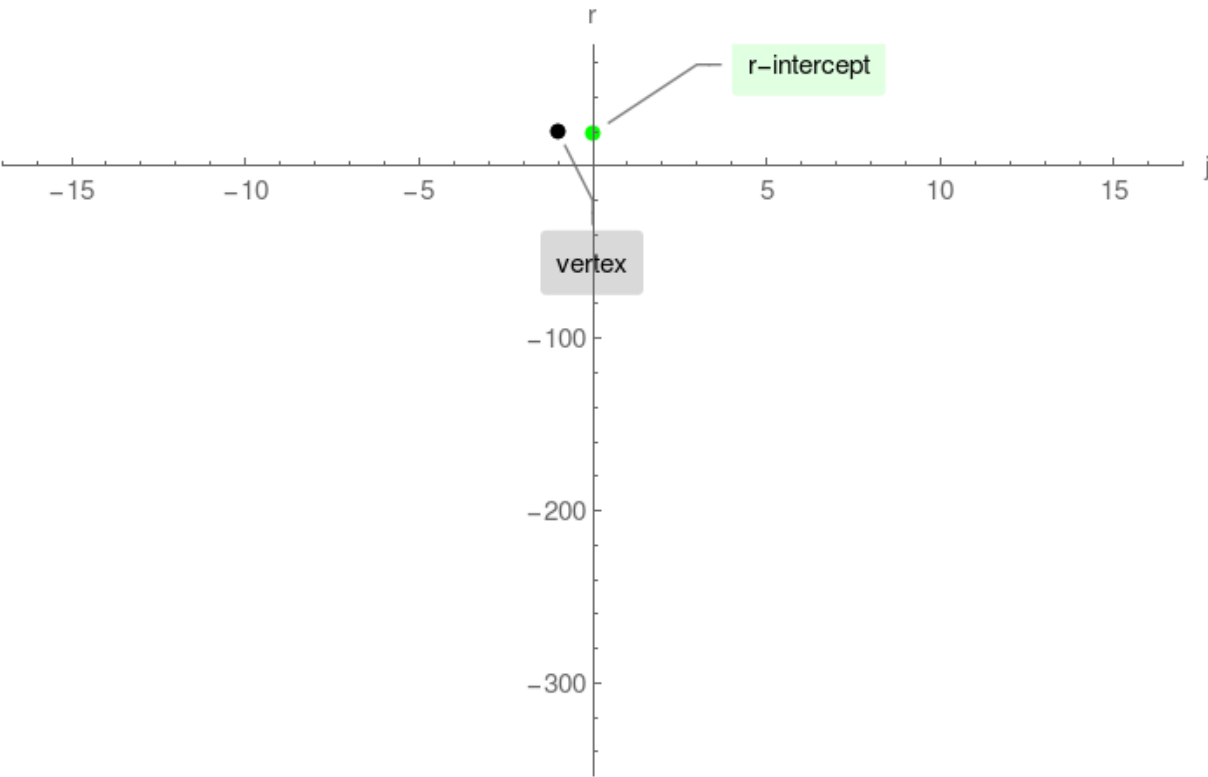
vertex =  $(-1, 20)$



### Step 2.

Compute r-intercept and plot single point:

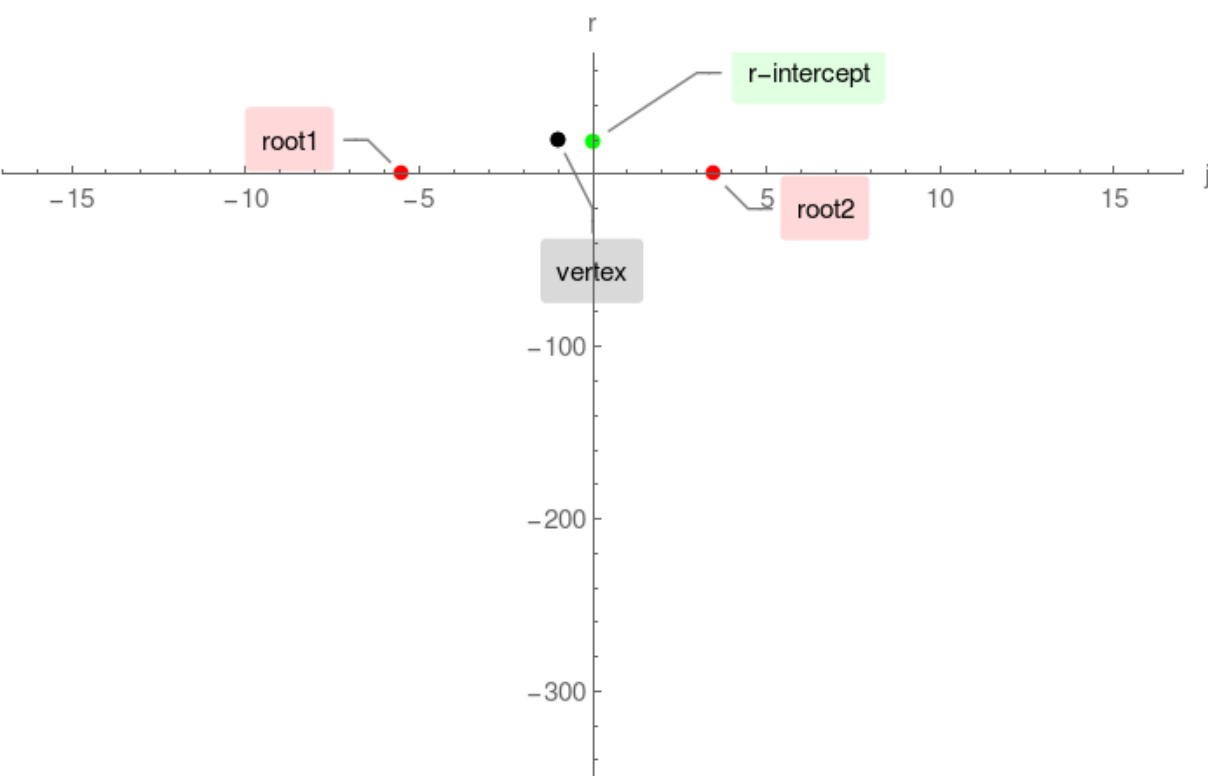
r-intercept =  $(0, 19)$



### Step 3.

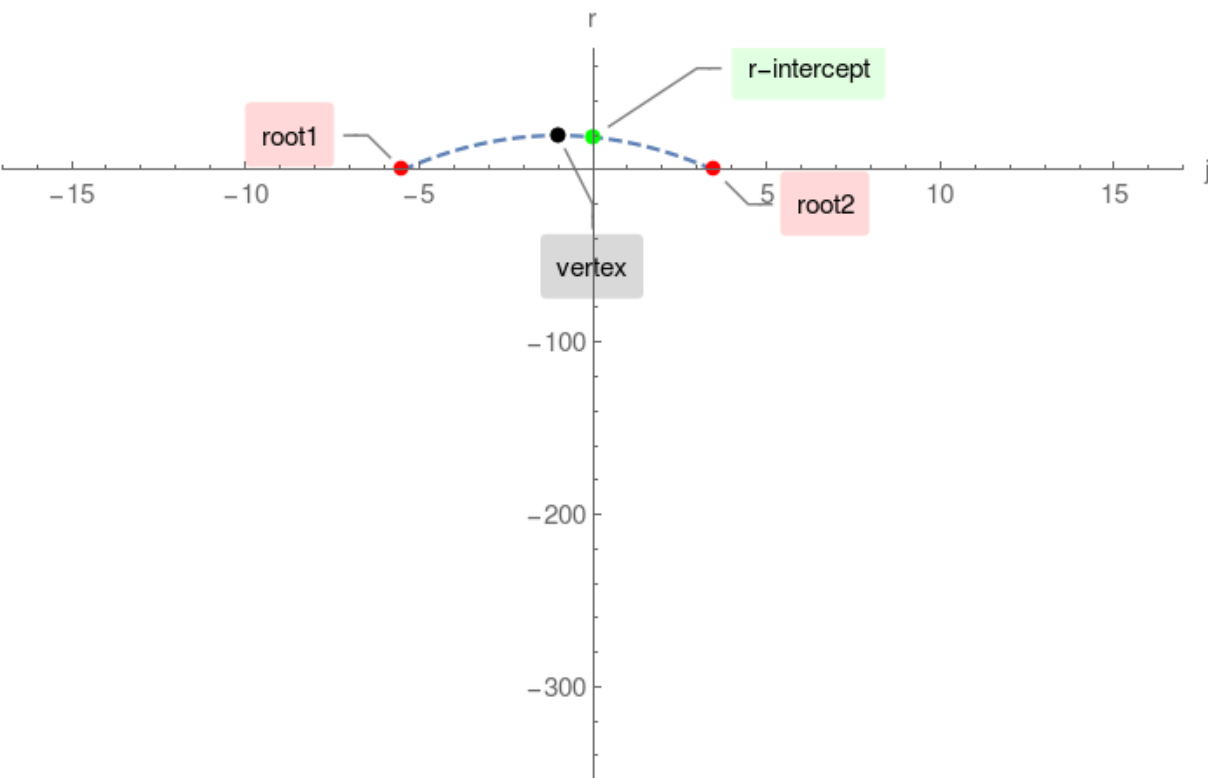
Compute j-intercepts by solving  $-j^2 - 2j + 19 = 0$ :

$(-1 - 2\sqrt{5}, 0)$ ,  $(-1 + 2\sqrt{5}, 0)$



### Step 4.

connect the above computed points:



### Step 5.

Extend the parabola beyond the range of intercepts

