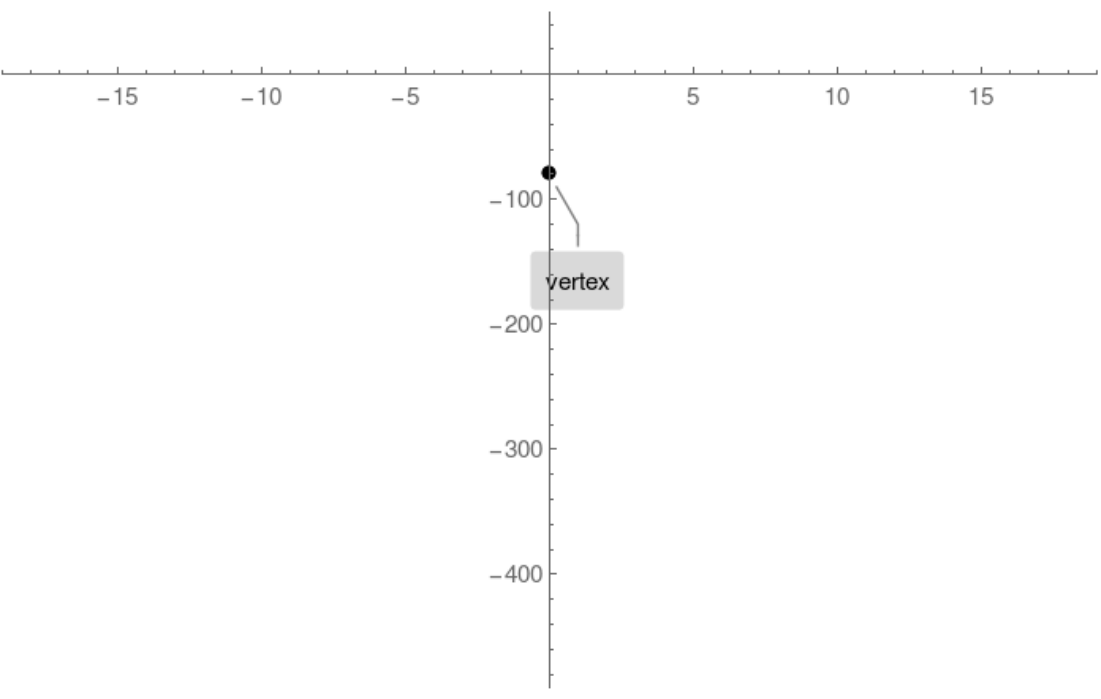
Example 3. Vertex equal to vertical intercept

Plot $e(s) = -s^2 - 80$

Step 1.

Compute vertex and plot single point:

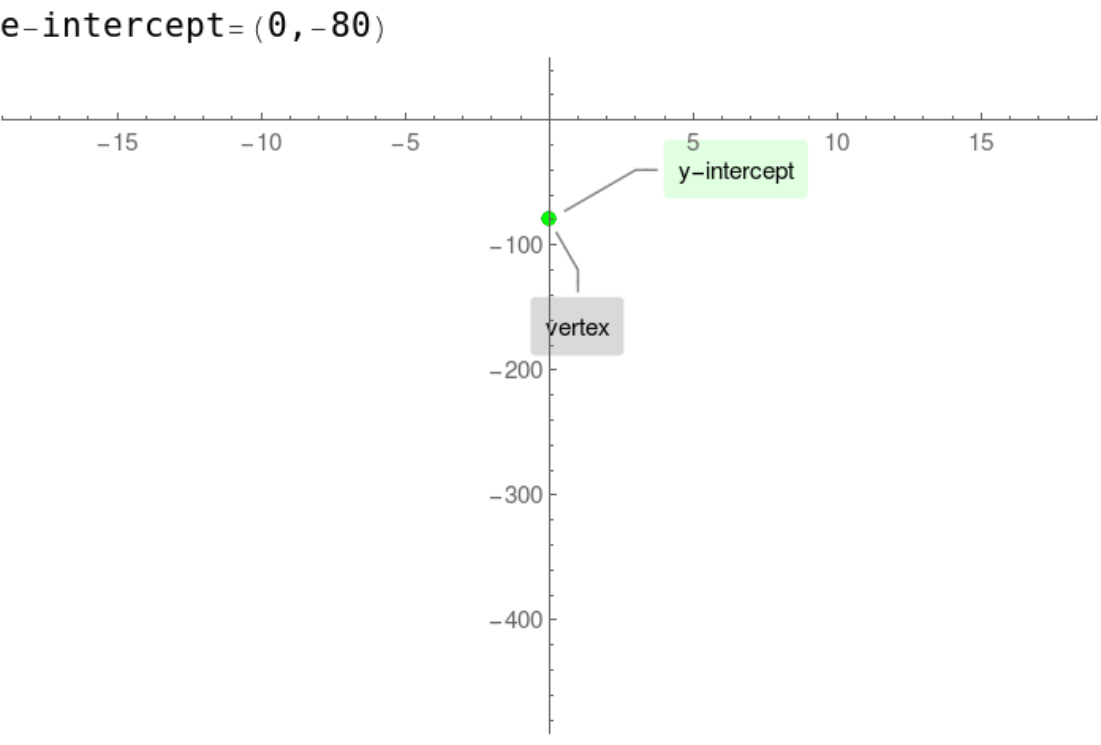
vertex$=(0,-80)$



Step 2.

Compute e-intercept and plot single point:

e-intercept$=(0,-80)$

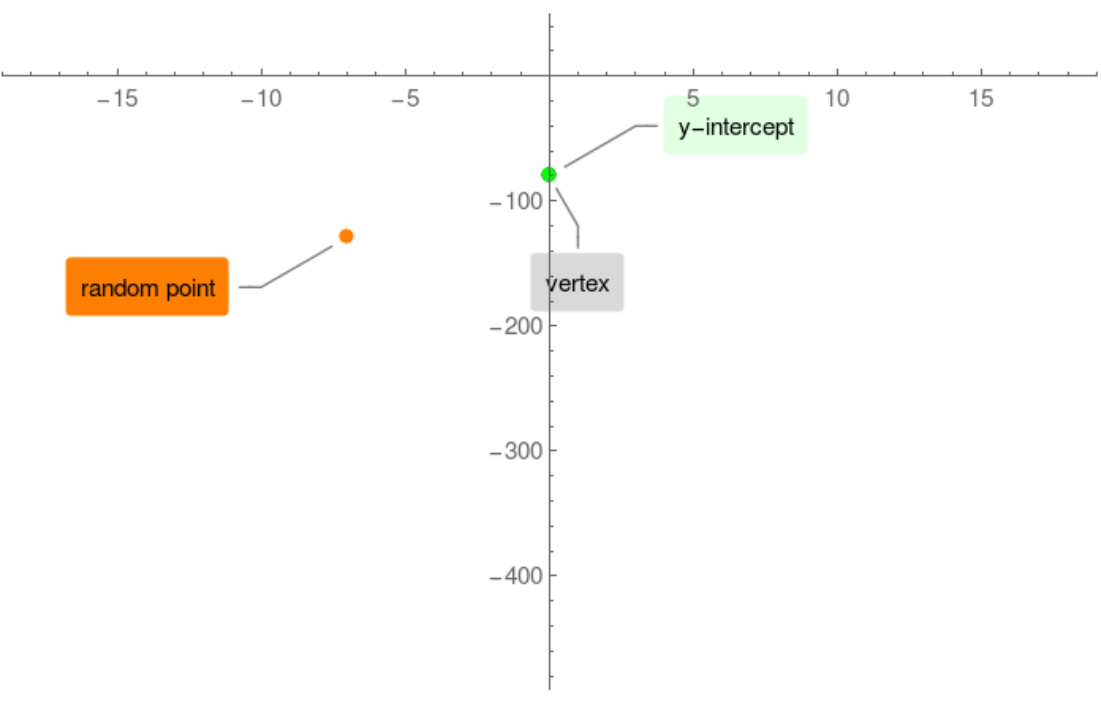


Step 3.

There are no s-intercepts!

Instead compute an arbitrary point on any side of vertex:

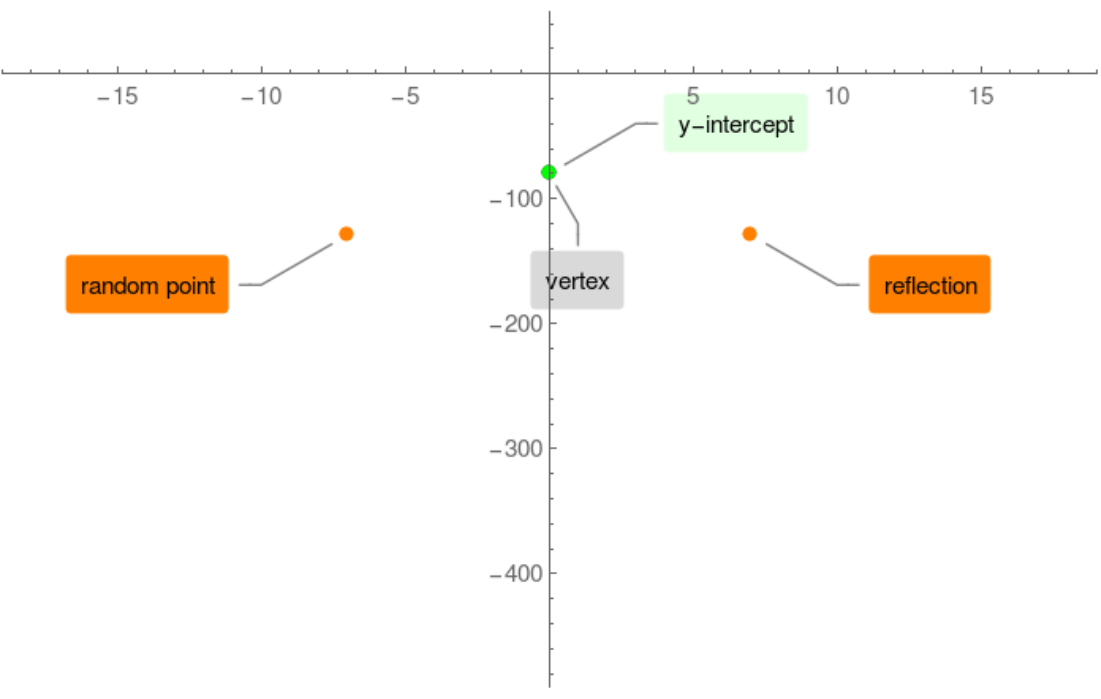
Random point$=(-7,-129)$



Step 4.

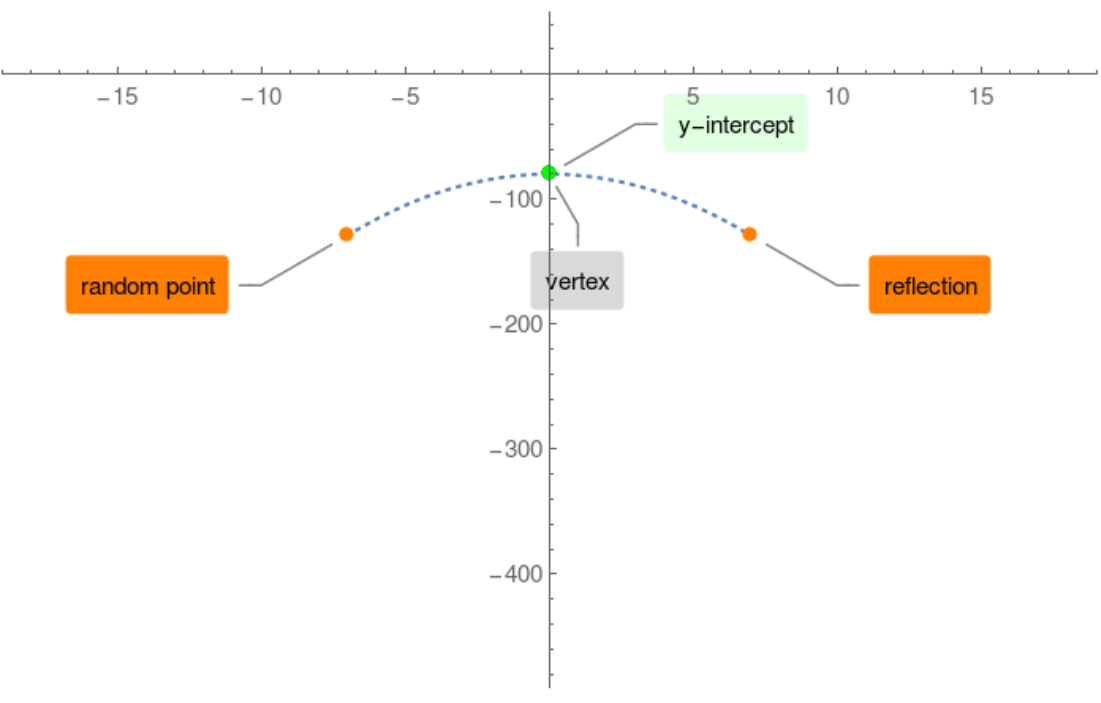
Reflect the point against the vertex's vertical axes:

Reflection $=(7,-129)$



Step 5.

connect the above computed points:



Step 6.

Extend the parabola beyond the range of intercepts