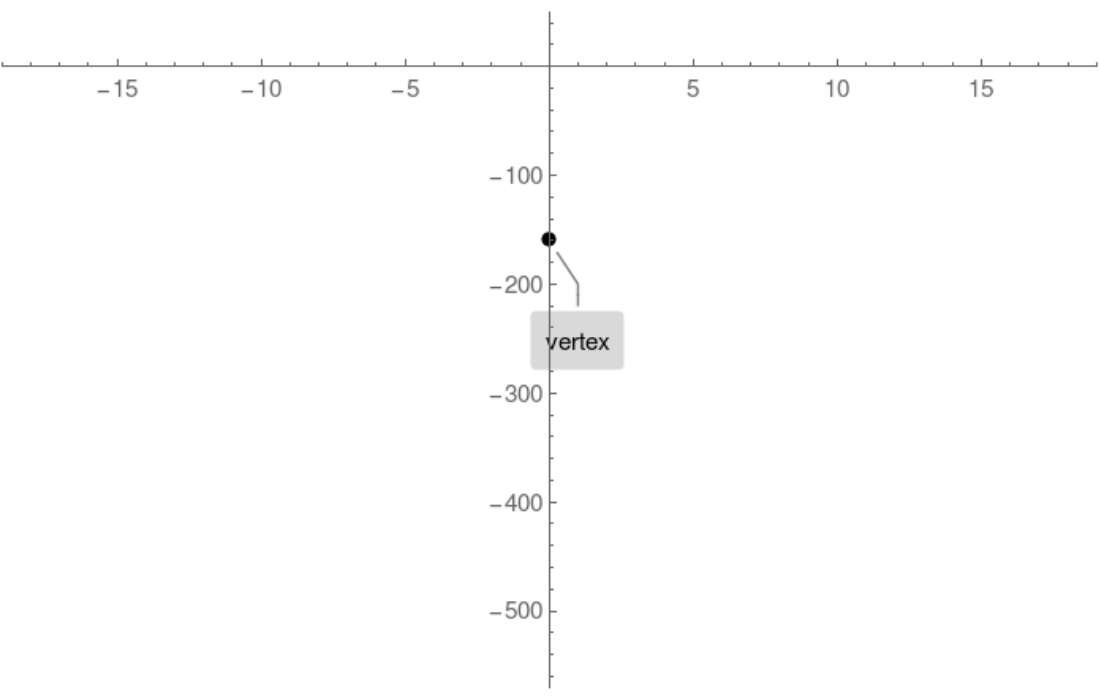
Example 3. Vertex equal to vertical intercept

Plot $q(t) = -t^2 - 160$

Step 1.

Compute vertex and plot single point:

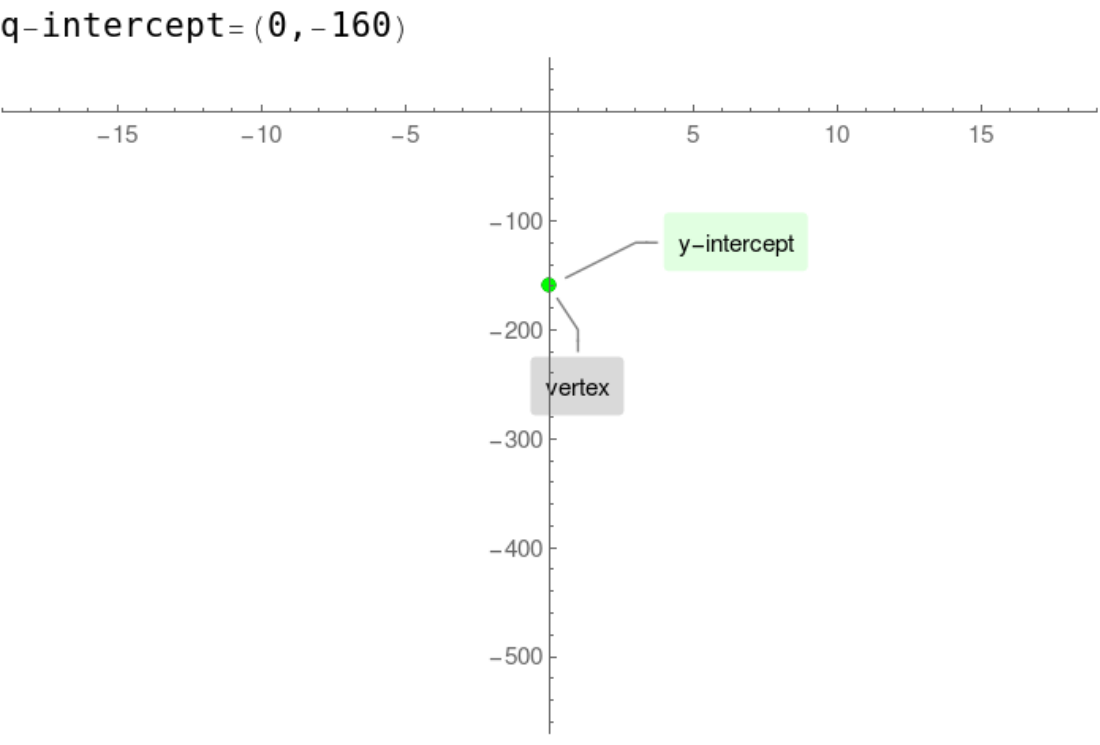
vertex$= (0, -160)$



Step 2.

Compute q-intercept and plot single point:

q-intercept$= (0, -160)$

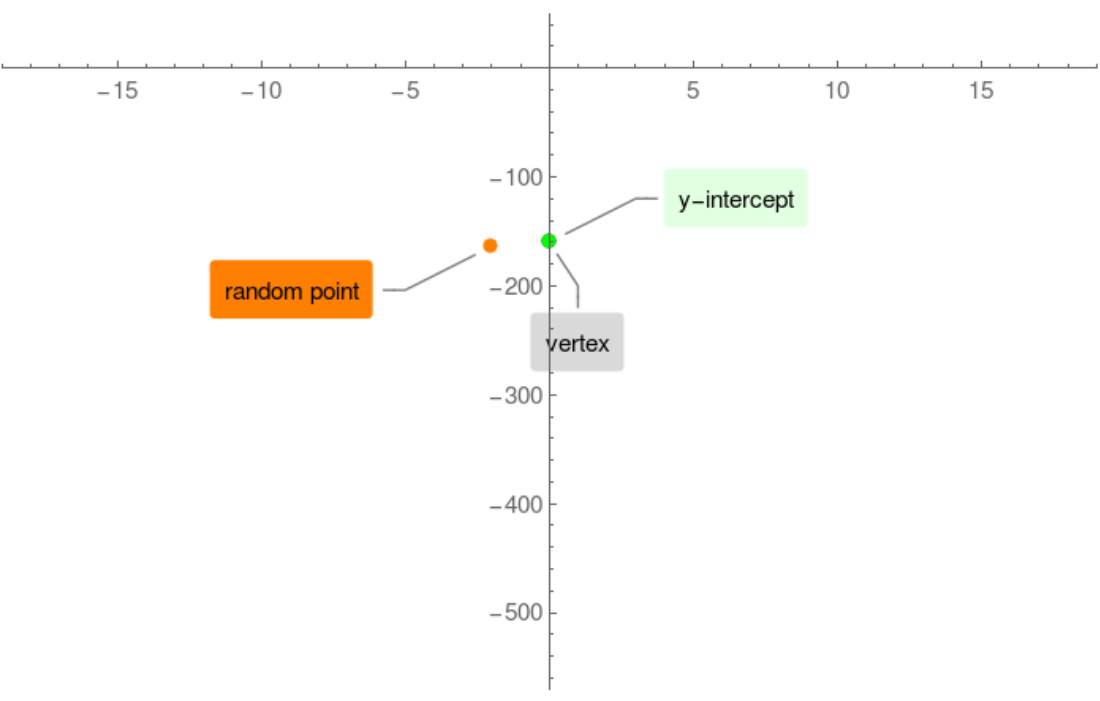


Step 3.

There are no t-intercepts!

Instead compute an arbitrary point on any side of vertex:

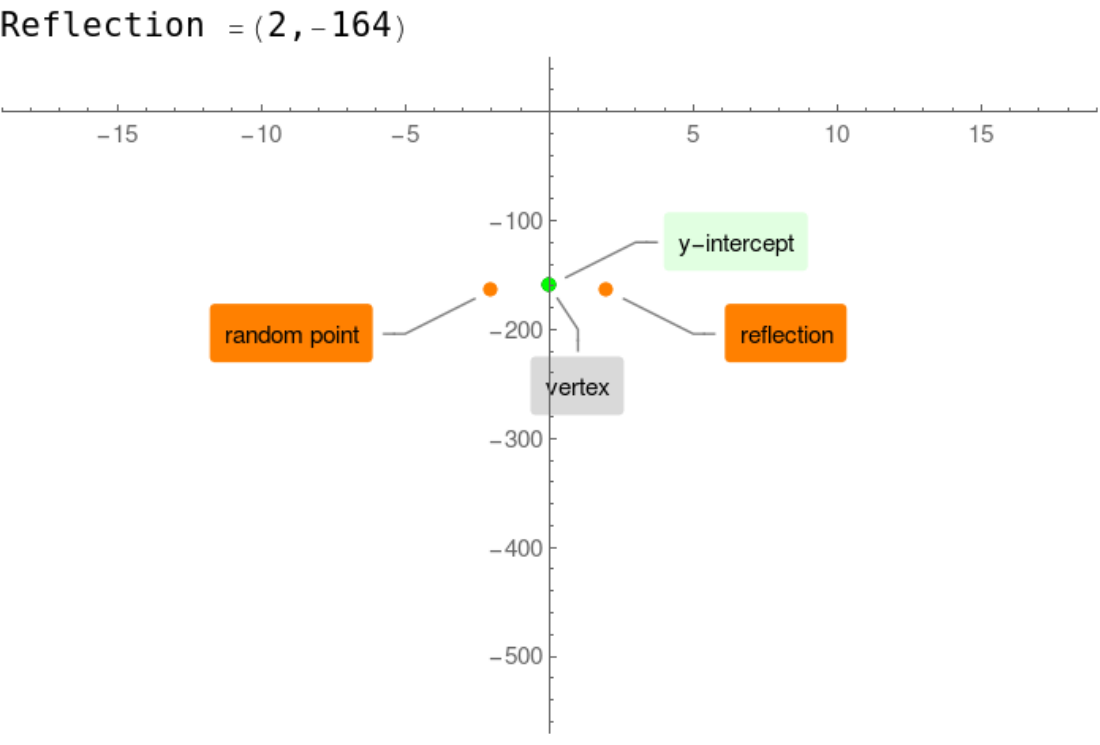
Random point$= (-2, -164)$



Step 4.

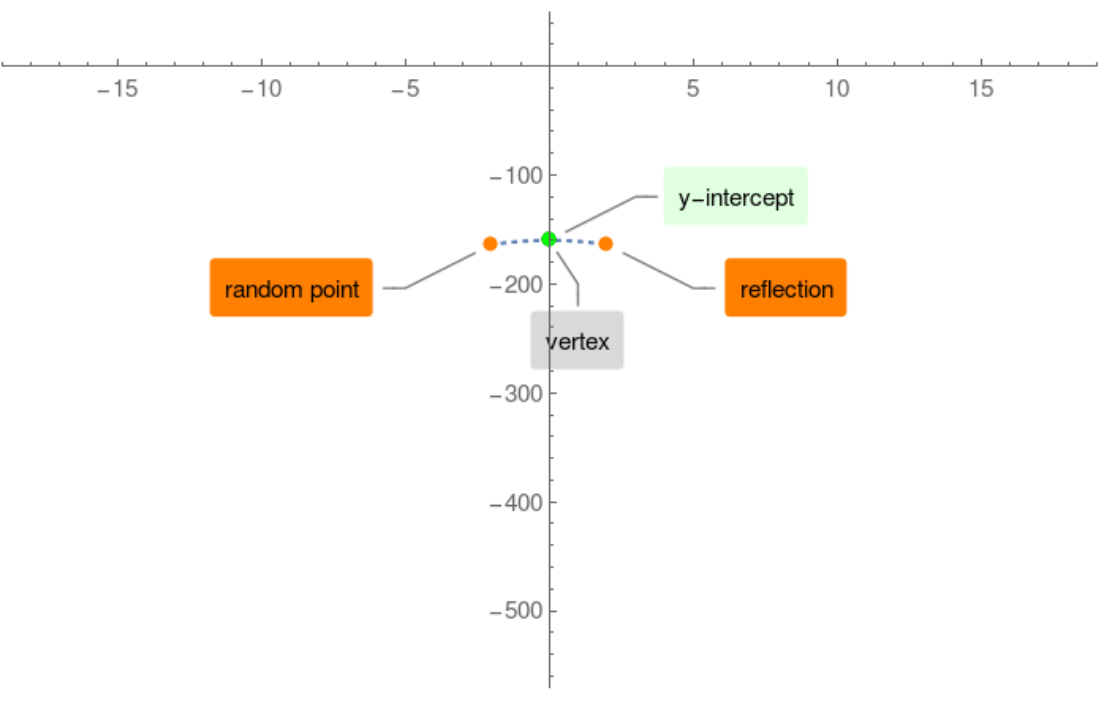
Reflect the point against the vertex's vertical axes:

Reflection $= (2, -164)$



Step 5.

connect the above computed points:



Step 6.

Extend the parabola beyond the range of intercepts