

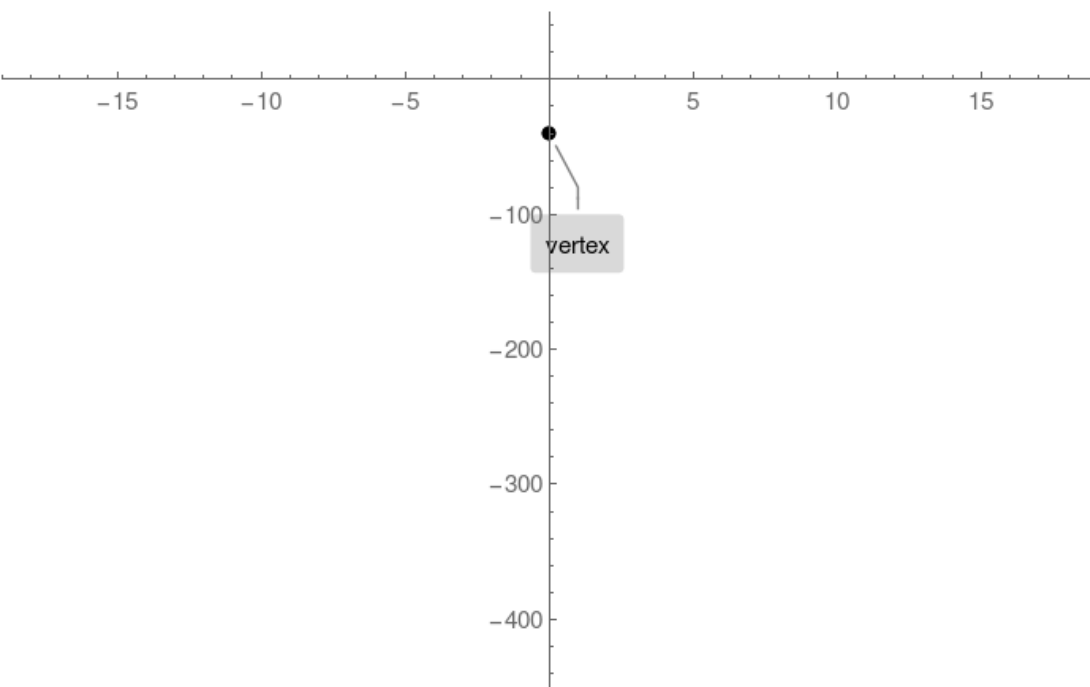
Example 3. Vertex equal to vertical intercept

Plot $v(q) = -q^2 - 40$

Step 1.

Compute vertex and plot single point:

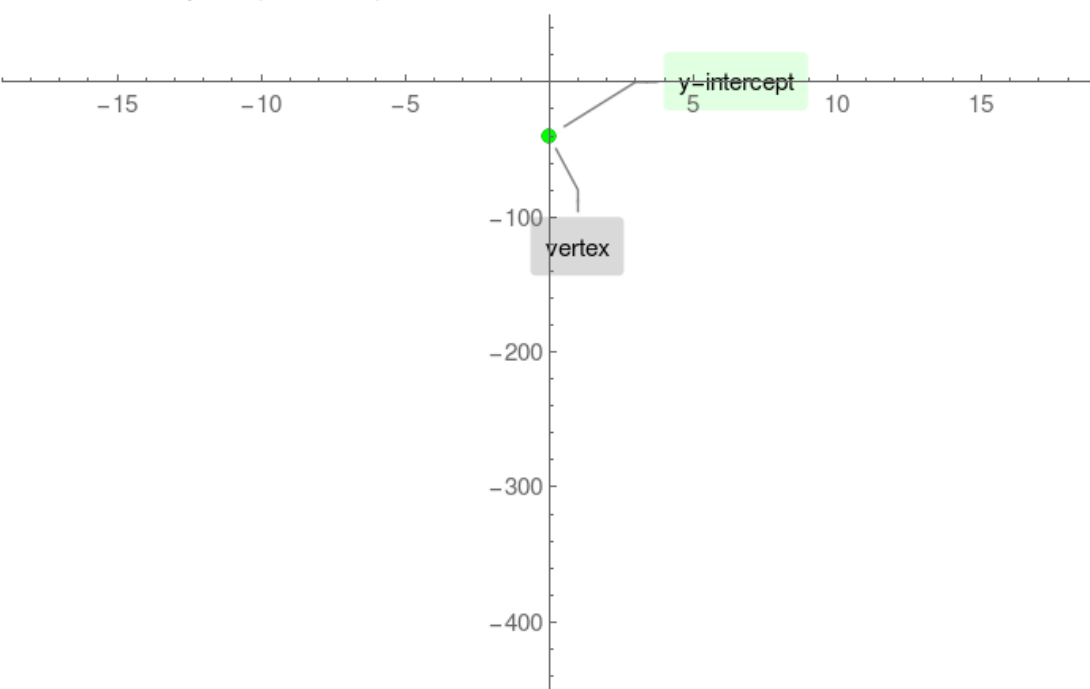
vertex = $(0, -40)$



Step 2.

Compute v-intercept and plot single point:

v-intercept = $(0, -40)$

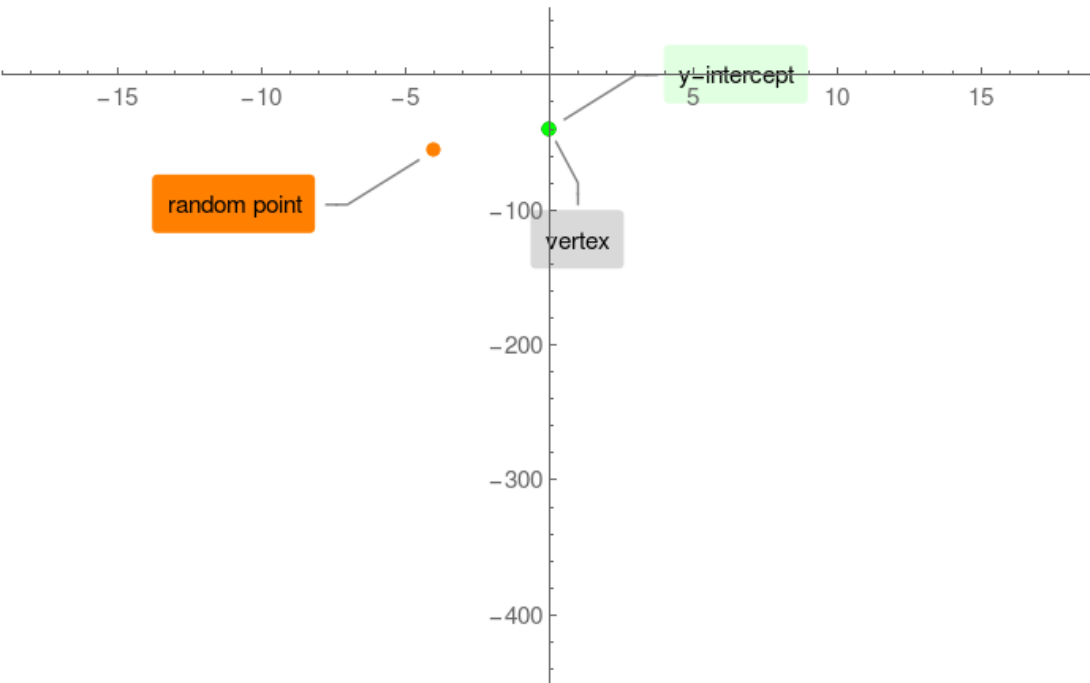


Step 3.

There are no q-intercepts!

Instead compute an arbitrary point on any side of vertex:

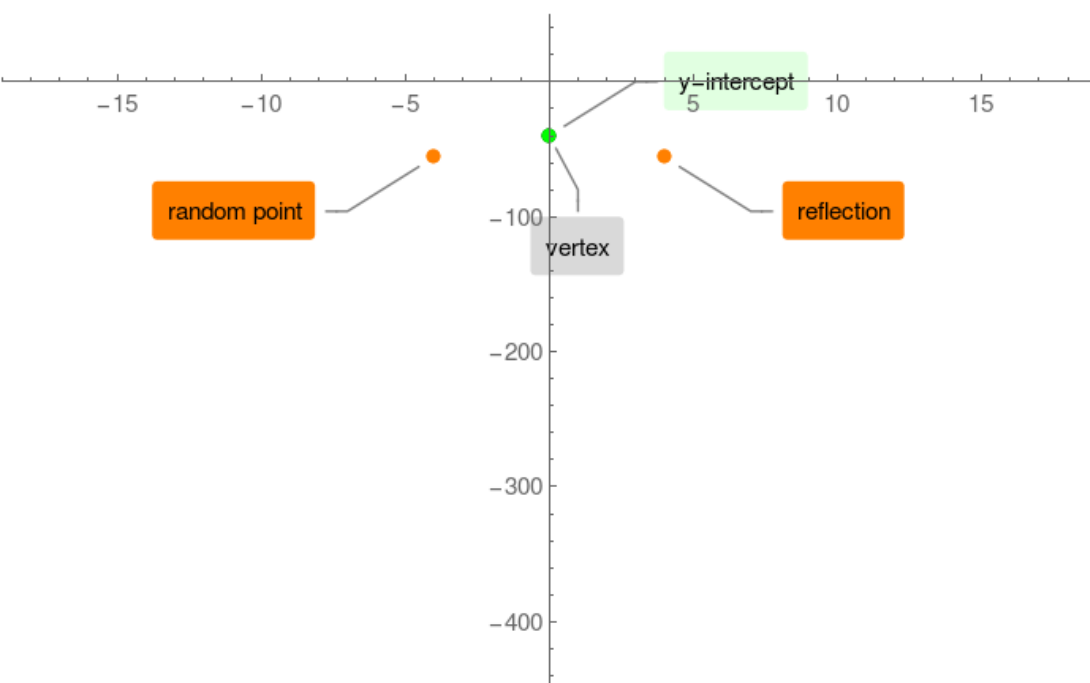
Random point = $(-4, -56)$



Step 4.

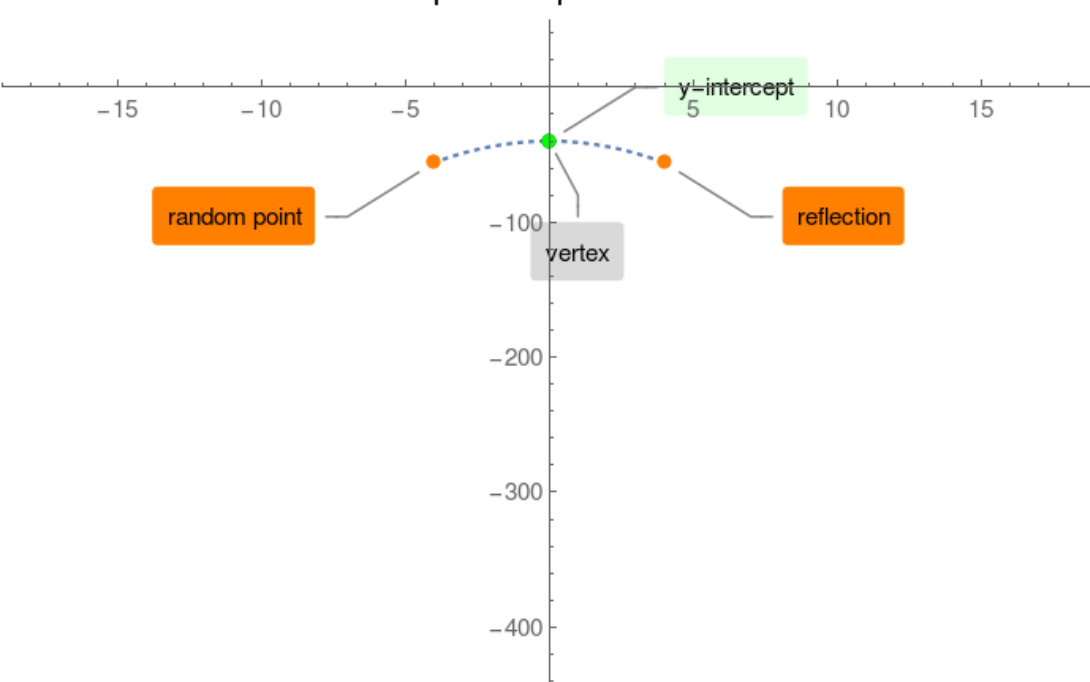
Reflect the point against the vertex's vertical axes:

Reflection = $(4, -56)$



Step 5.

connect the above computed points:



Step 6.

Extend the parabola beyond the range of intercepts

