

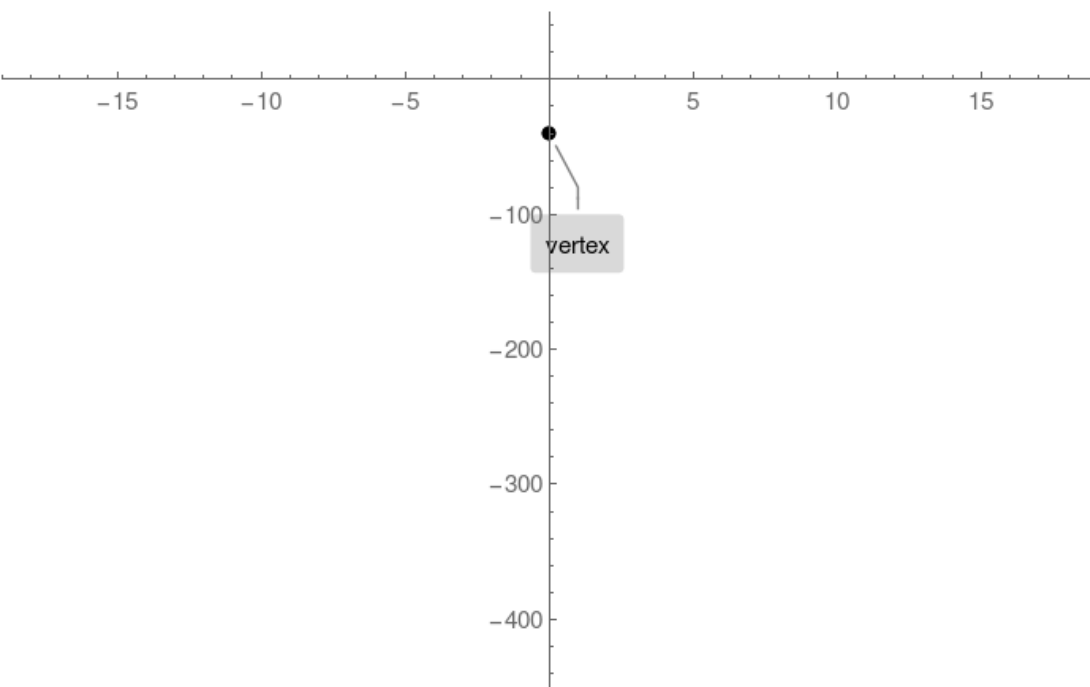
### Example 3. Vertex equal to vertical intercept

Plot  $g(w) = -w^2 - 40$

#### Step 1.

Compute vertex and plot single point:

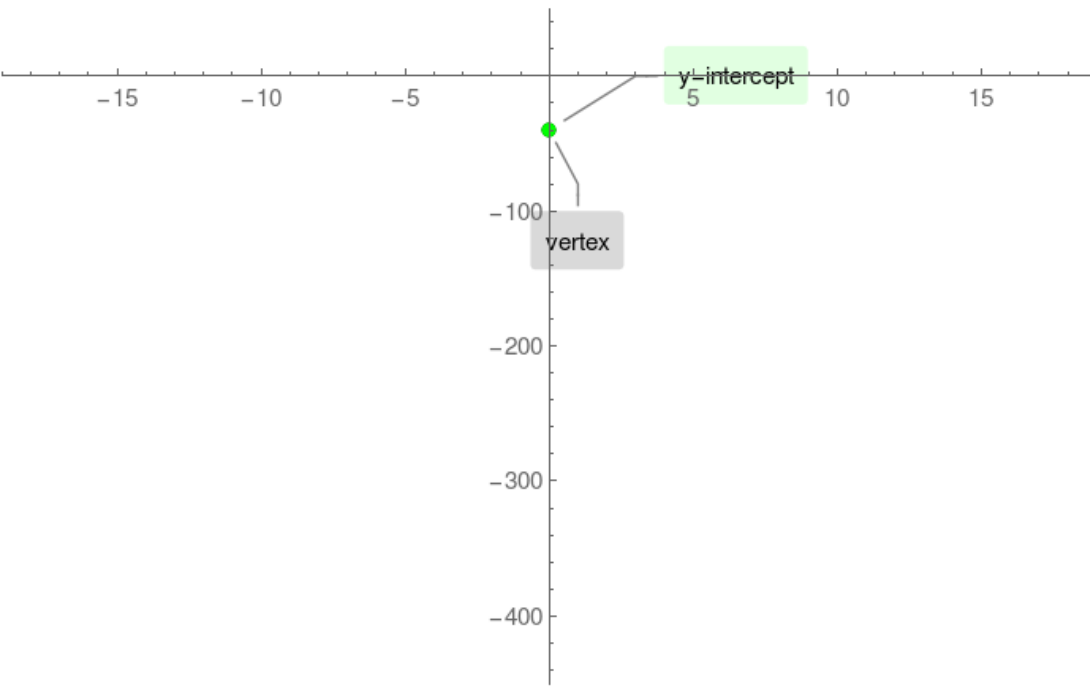
vertex =  $(0, -40)$



#### Step 2.

Compute g-intercept and plot single point:

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

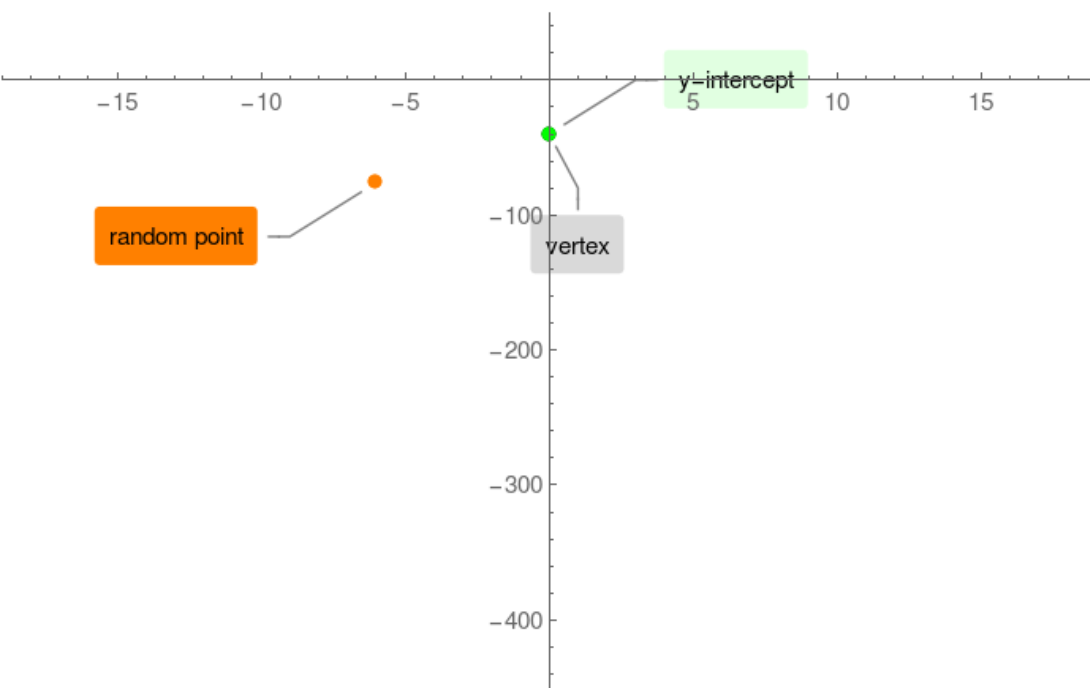


#### Step 3.

There are no w-intercepts!

Instead compute an arbitrary point on any side of vertex:

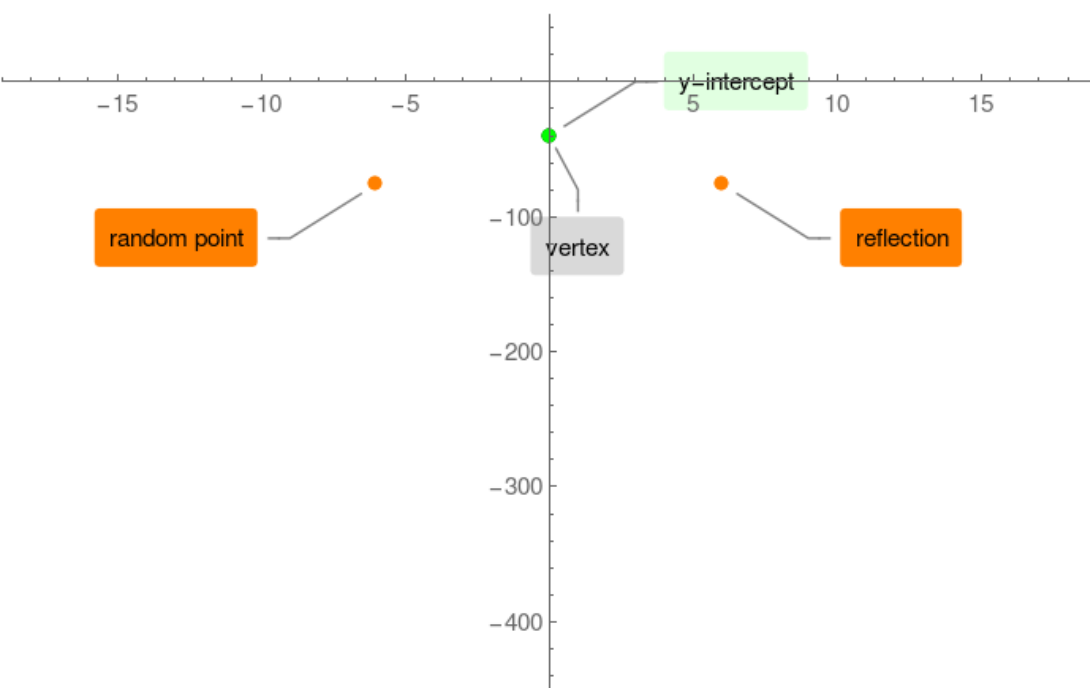
Random point =  $(-6, -76)$



#### Step 4.

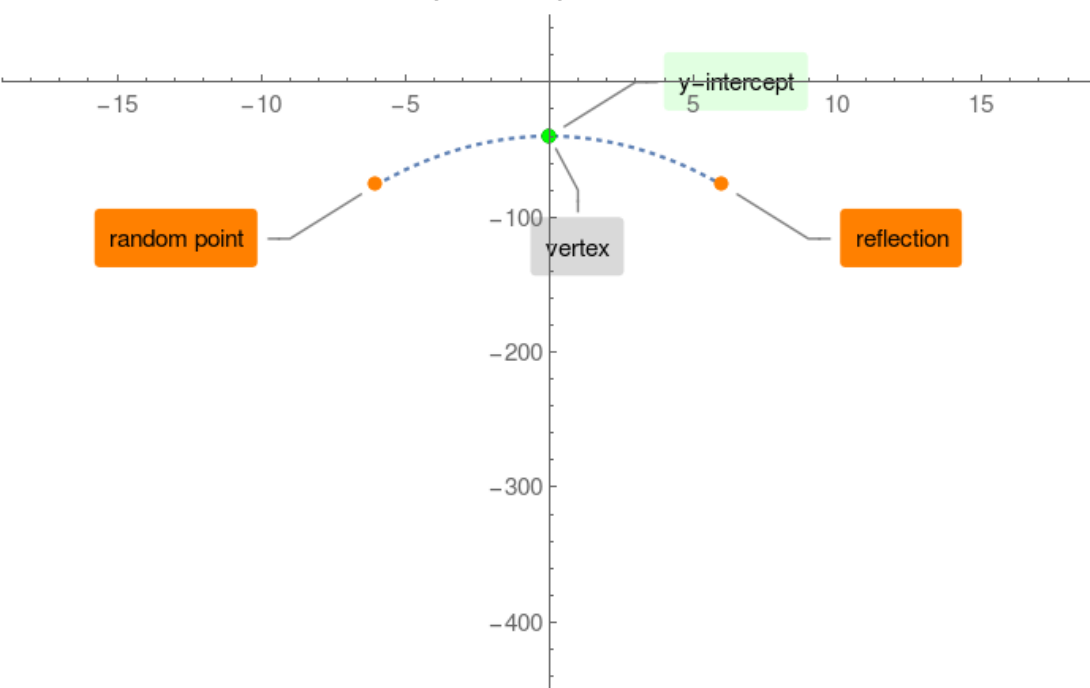
Reflect the point against the vertex's vertical axes:

Reflection =  $(6, -76)$



#### Step 5.

connect the above computed points:



#### Step 6.

Extend the parabola beyond the range of intercepts

