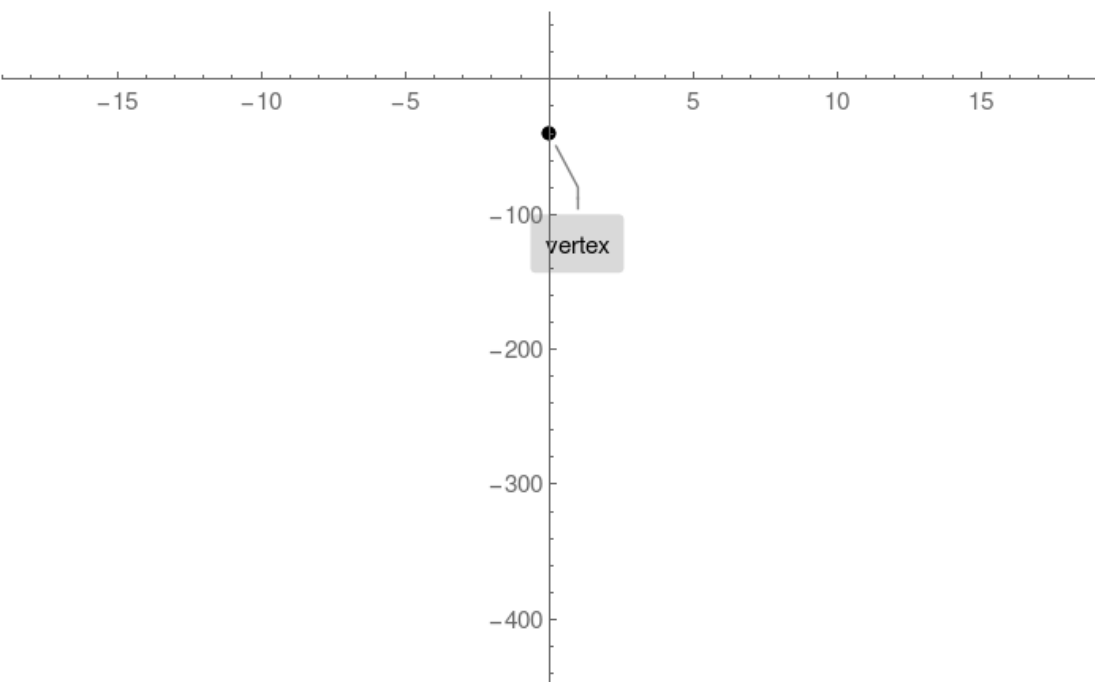# Example 3. Vertex equal to vertical intercept

Plot $s(g) = -g^2 - 40$
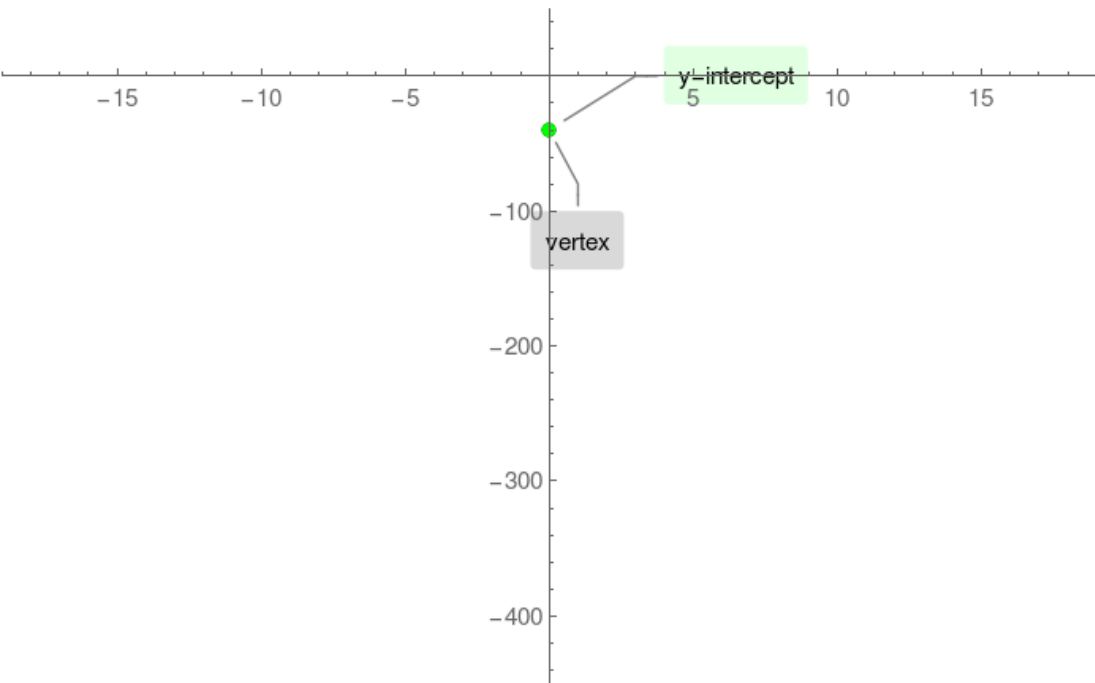
Step 1.

Compute vertex and plot single point:
vertex = $(0, -40)$

Step 2.

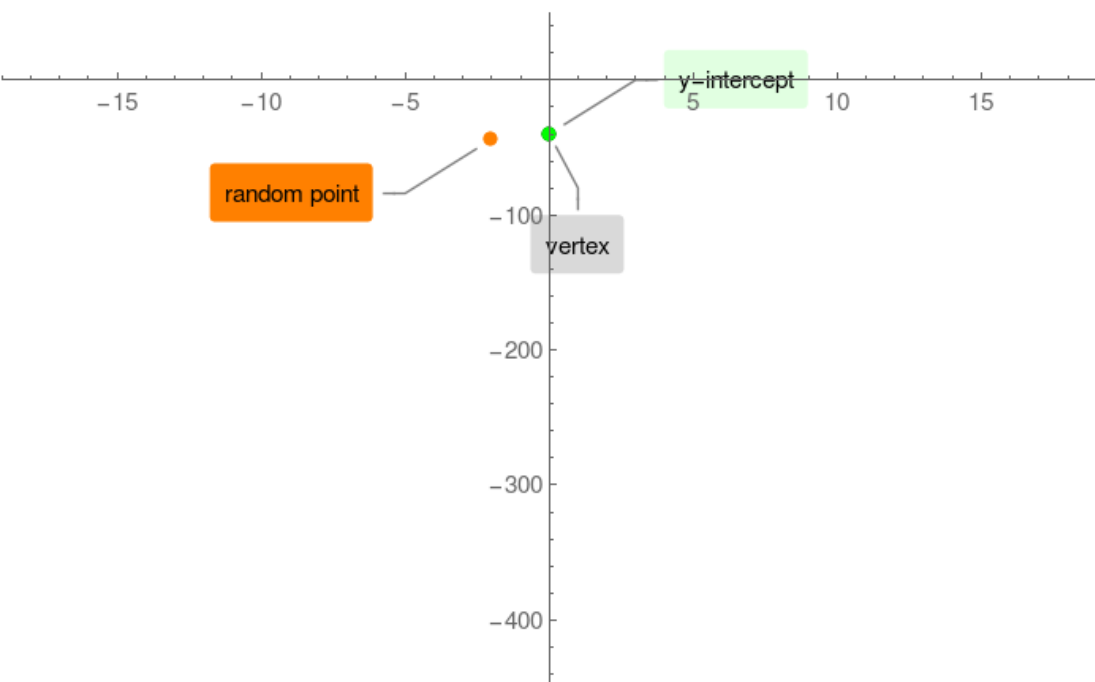Compute s-intercept and plot single point:
s-intercept = $(0, -40)$

Step 3.

There are no g-intercepts!
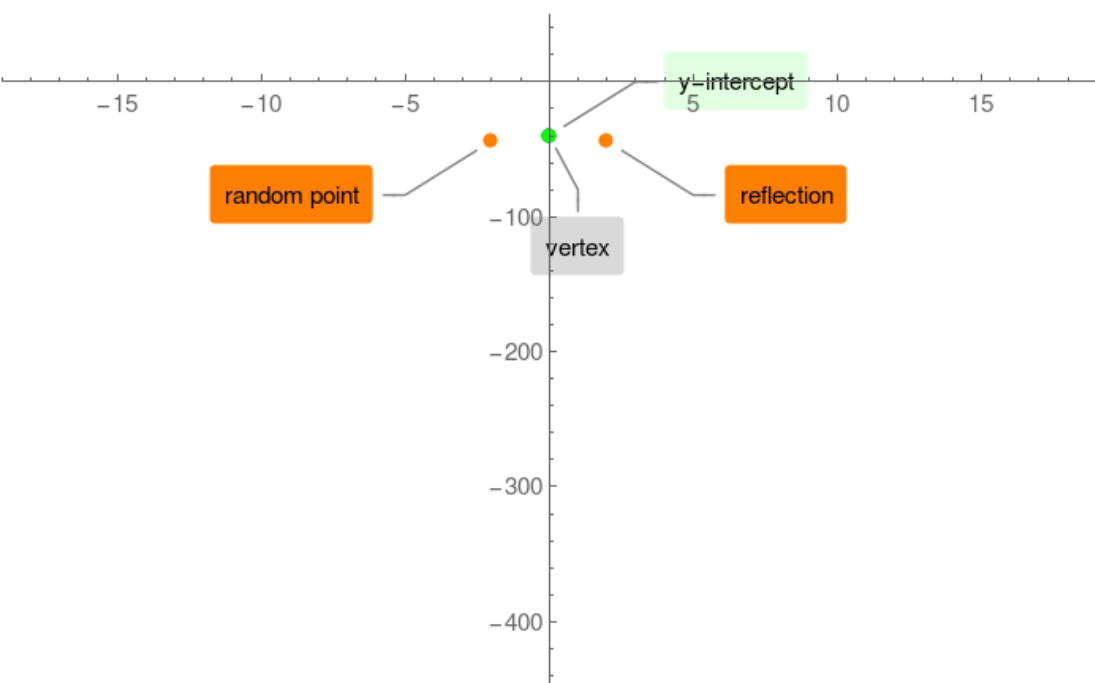Instead compute an arbitrary point on any side of vertex:
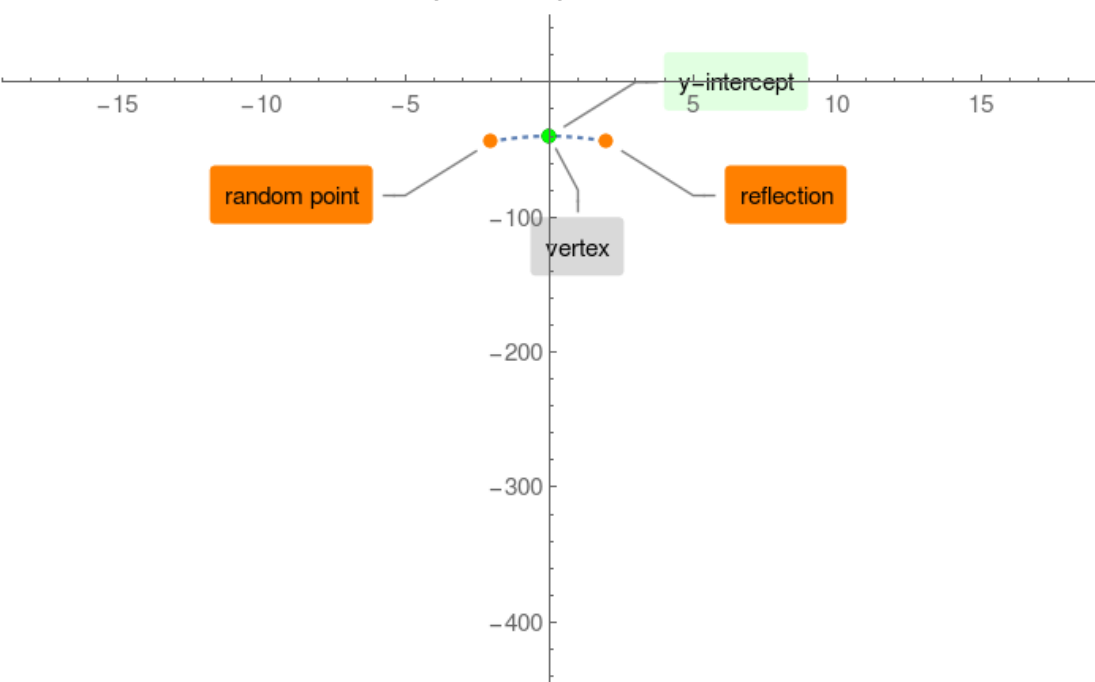Random point = $(-2, -44)$

Step 4.

Reflect the point against the vertex's vertical axes:
Reflection = $(2, -44)$

Step 5.

connect the above computed points:

Step 6.

Extend the parabola beyond the range of intercepts