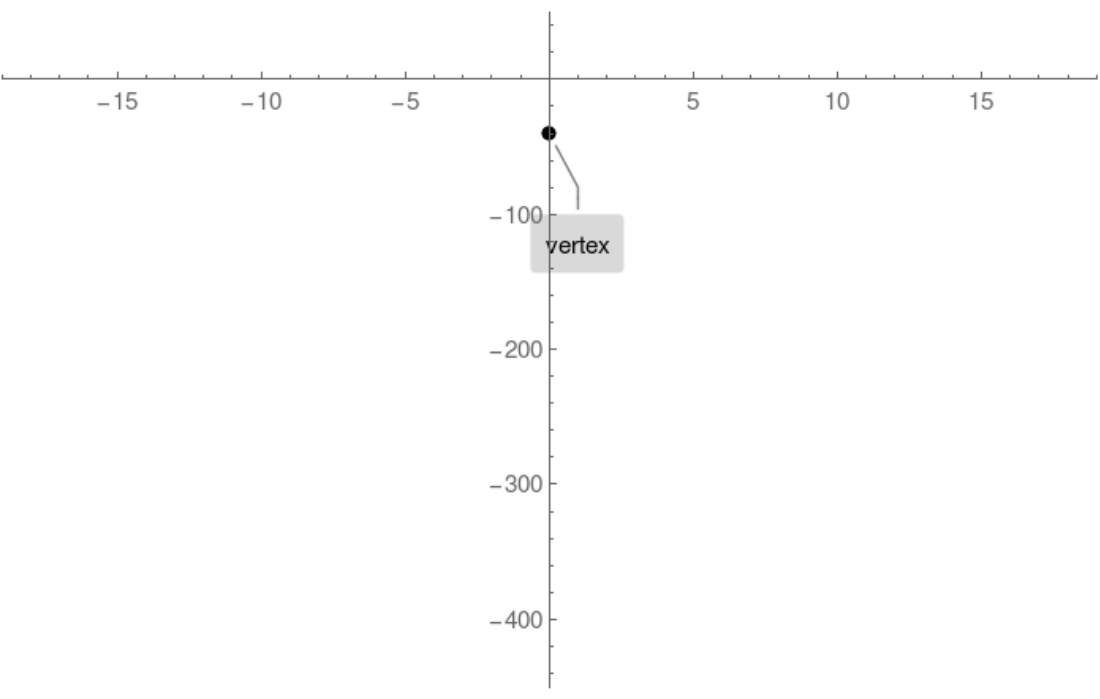
# Example 3. Vertex equal to vertical intercept

Plot $s(n) = -n^2 - 40$

## Step 1.

Compute vertex and plot single point:

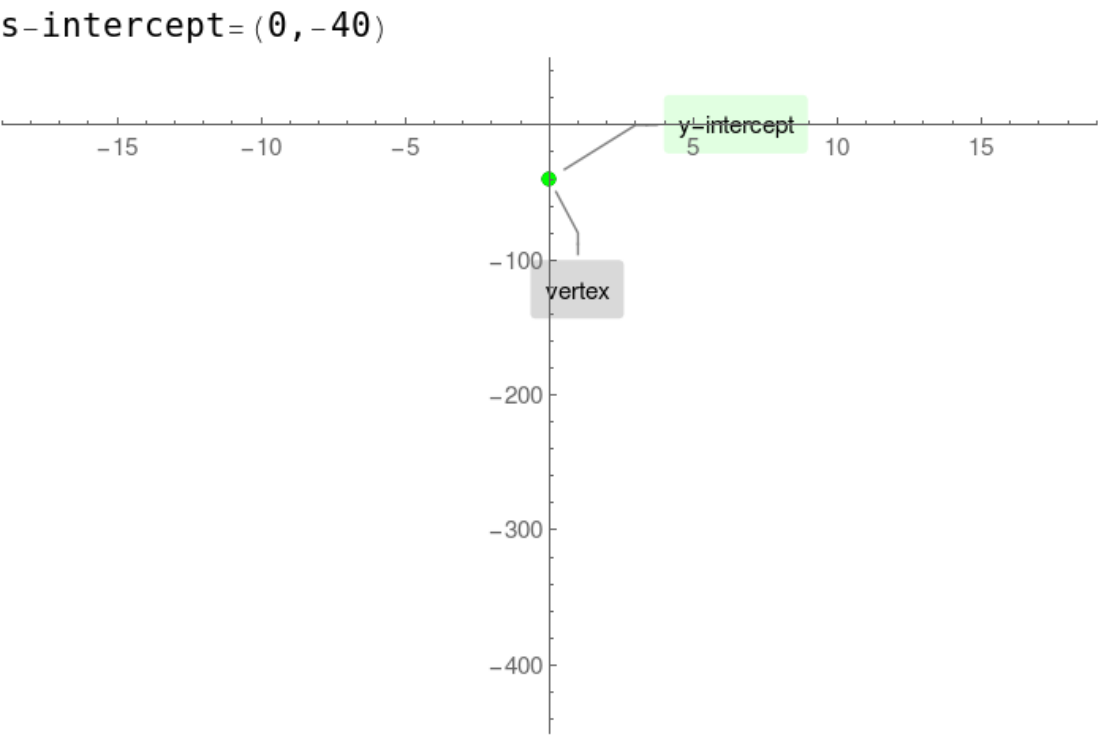
vertex$=(0,-40)$




## Step 2.

Compute s-intercept and plot single point:

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

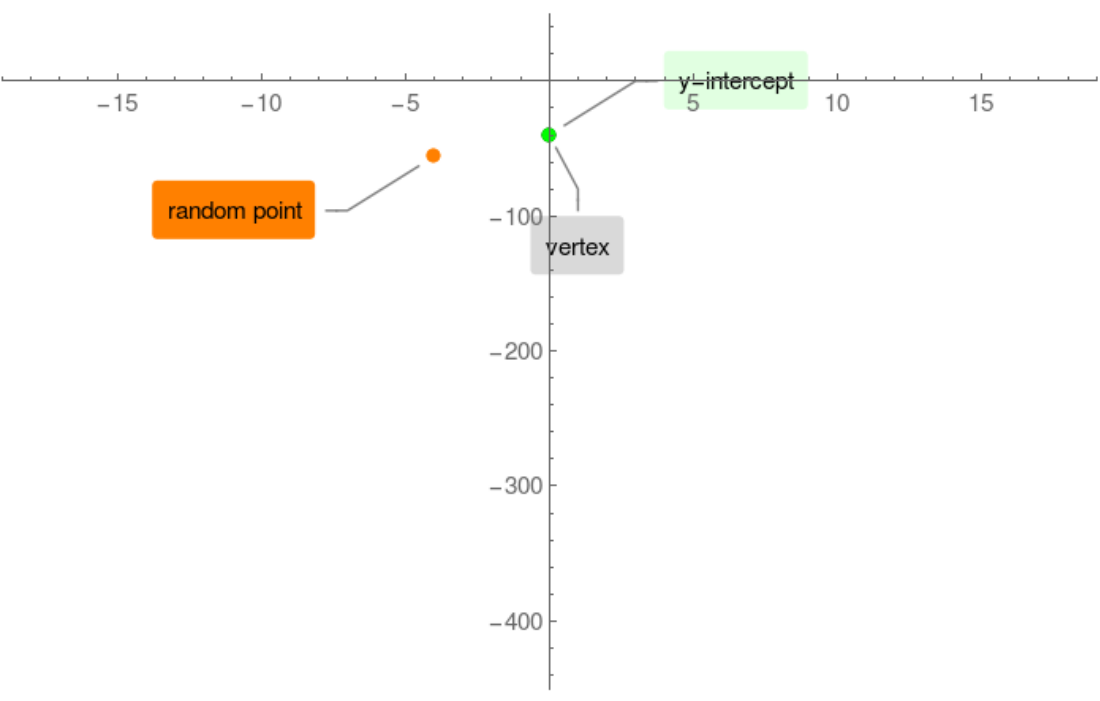



## Step 3.

There are no n-intercepts!

Instead compute an arbitrary point on any side of vertex:

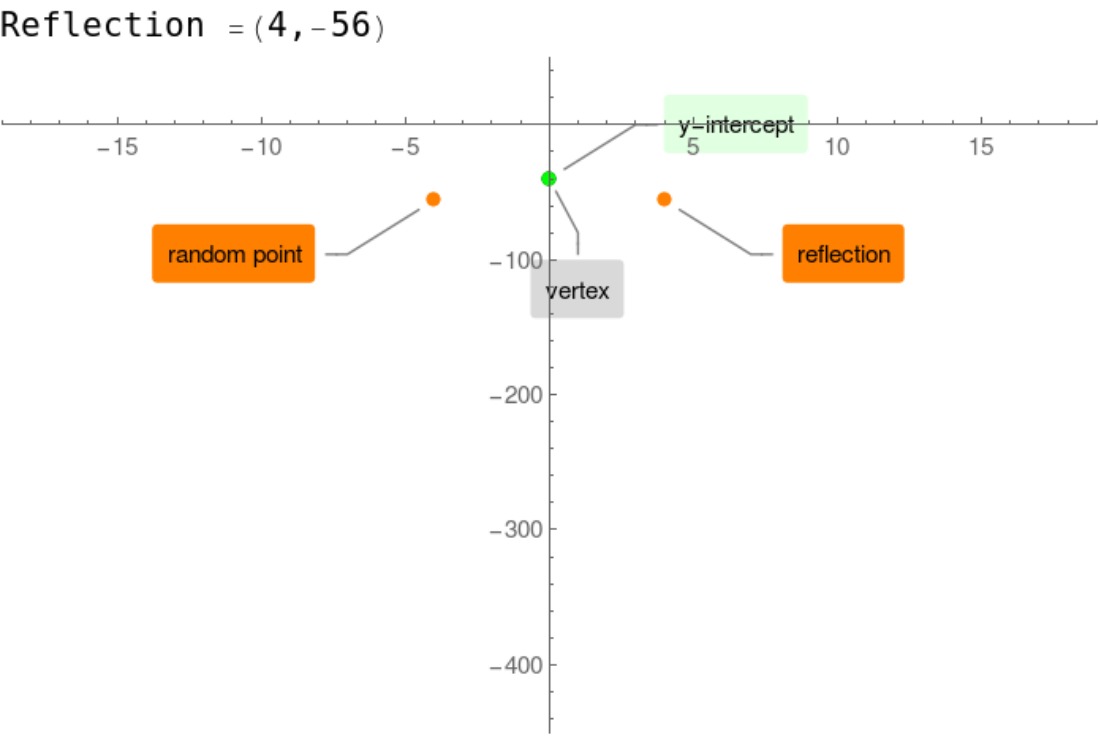
Random point$=(-4,-56)$




## Step 4.

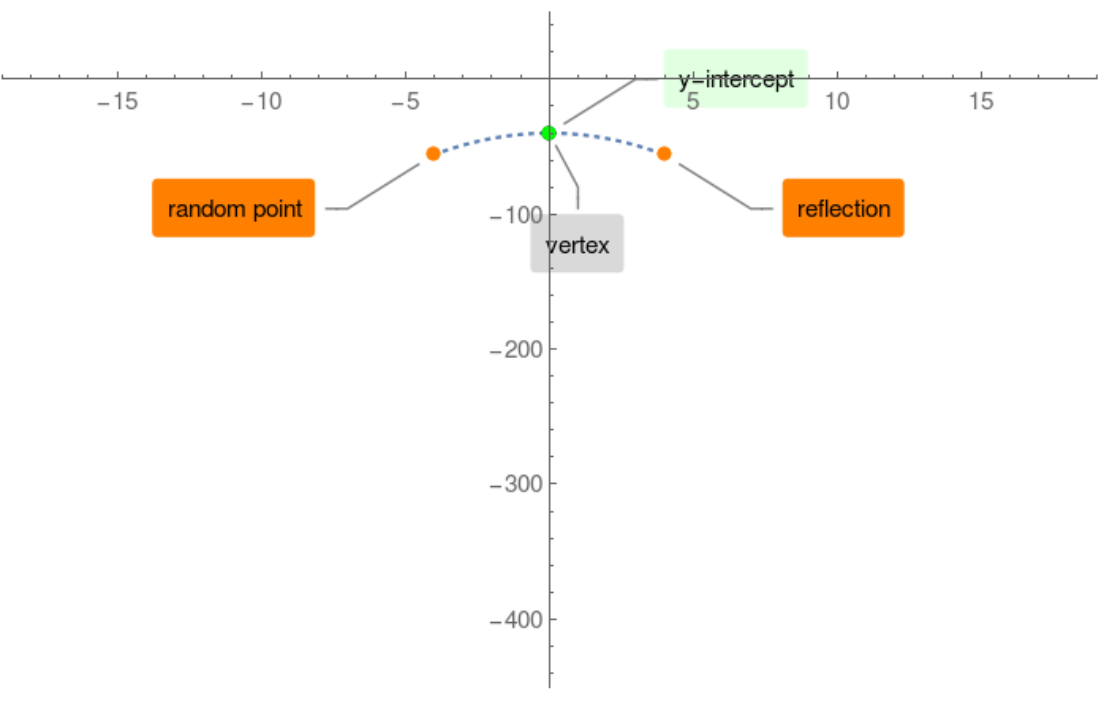
Reflect the point against the vertex's vertical axes:

Reflection $=(4,-56)$




## Step 5.

connect the above computed points:




## Step 6.

Extend the parabola beyond the range of intercepts