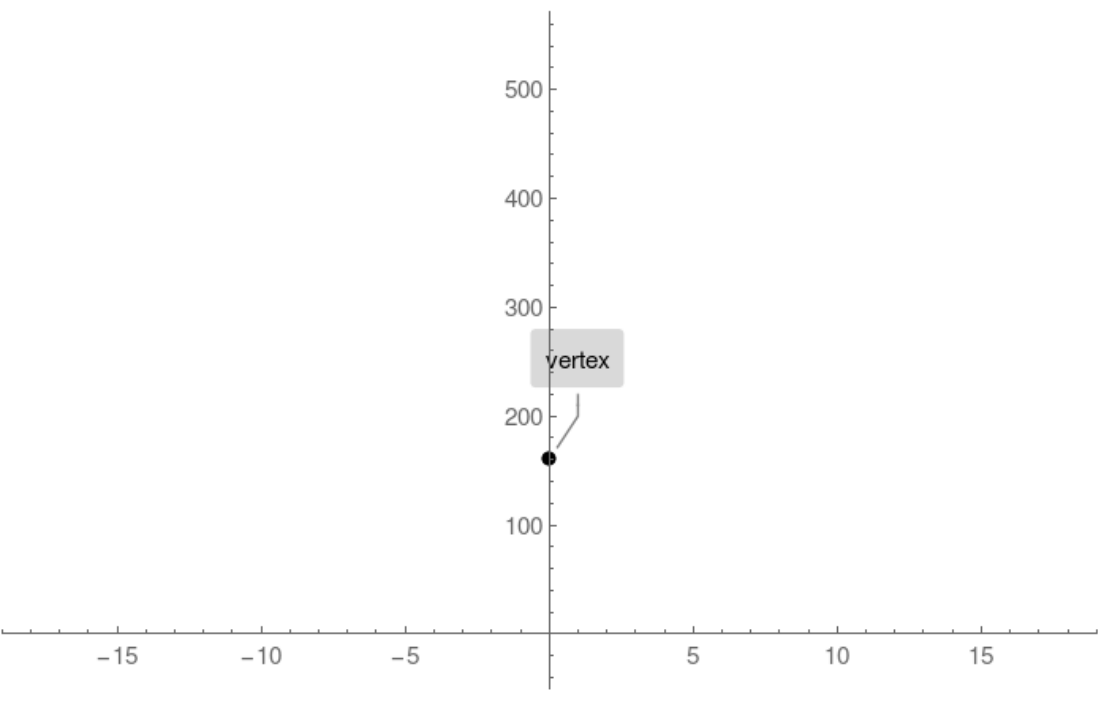
Example 3. Vertex equal to vertical intercept

Plot $f(r) = r^2 + 160$

Step 1.

Compute vertex and plot single point:

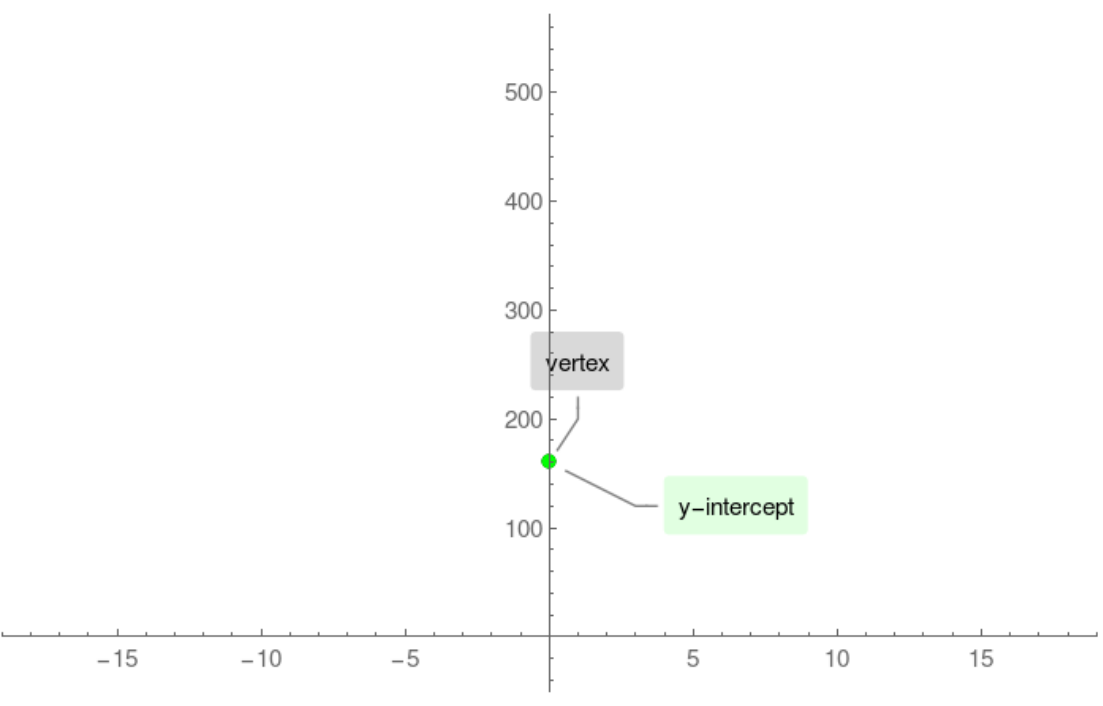
vertex = (0,160)



Step 2.

Compute f-intercept and plot single point:

f-intercept = (0,160)

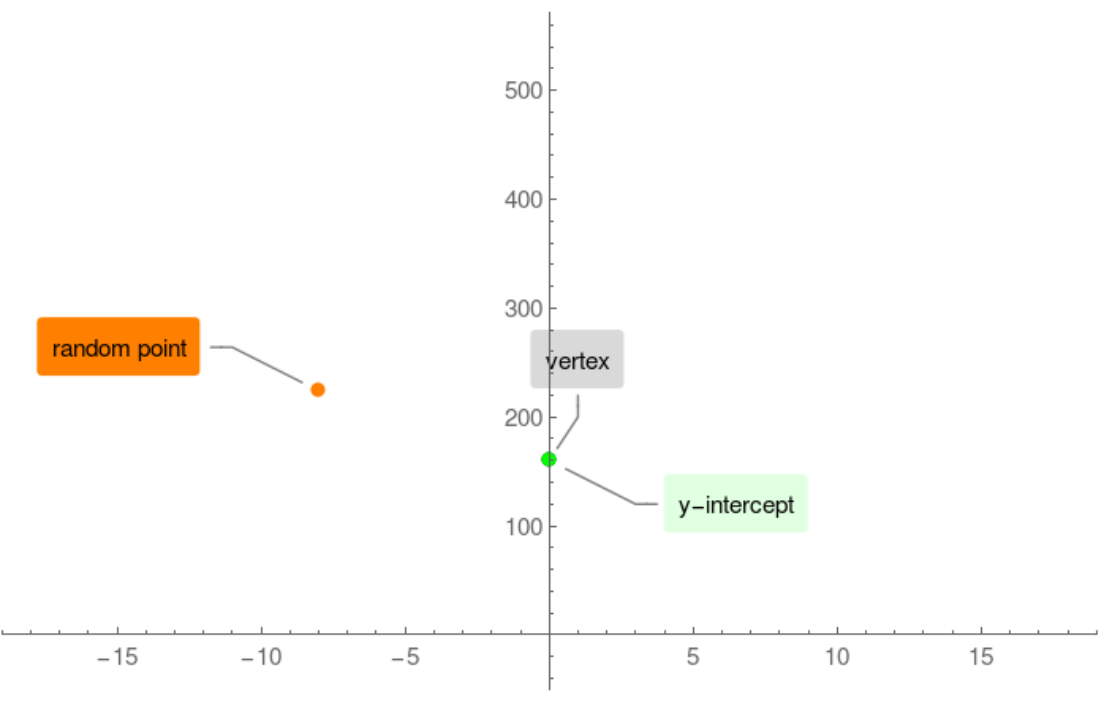


Step 3.

There are no r-intercepts!

Instead compute an arbitrary point on any side of vertex:

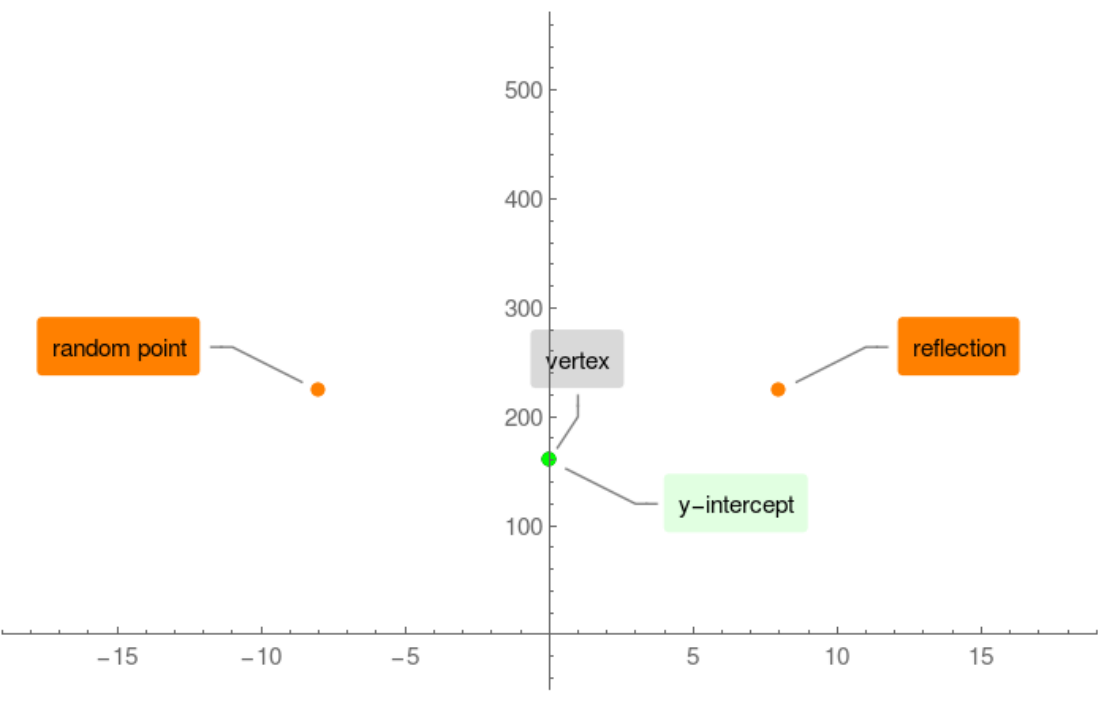
Random point = (−8,224)



Step 4.

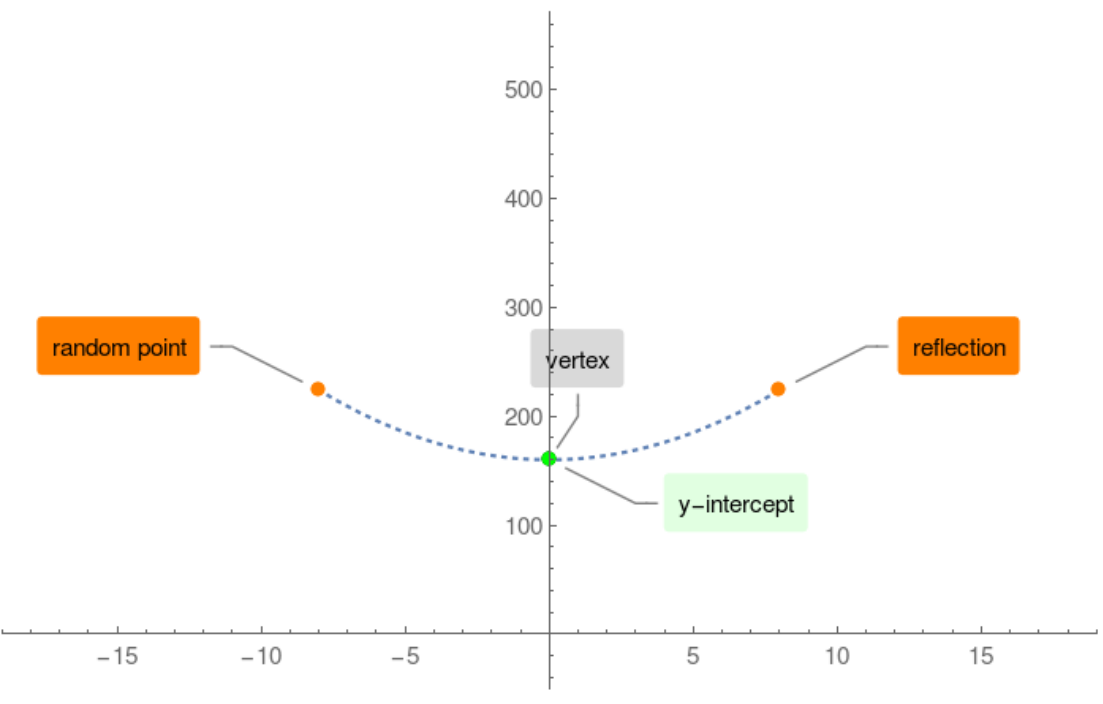
Reflect the point against the vertex's vertical axes:

Reflection = (8,224)



Step 5.

connect the above computed points:



Step 6.

Extend the parabola beyond the range of intercepts