General equation for a parabola with a vertex at the origin: $y = \frac{x^2}{4p}$

Below are the graphs of parabola p values of ¼, ½, and 1 .

1. The three labeled points on the three parabolas have the same x-value of 2. Plug that value of 2 in for the x in the general equation for a parabola and simplify.

2. How does the resulting equation help you support your claim that increasing *p* makes the shape of the parabola wider? Chose a few values of *p* to build evidence for your claim.

3. Add the parabola with a vertex at the origin and a *p* value of 5 to the graph below.