

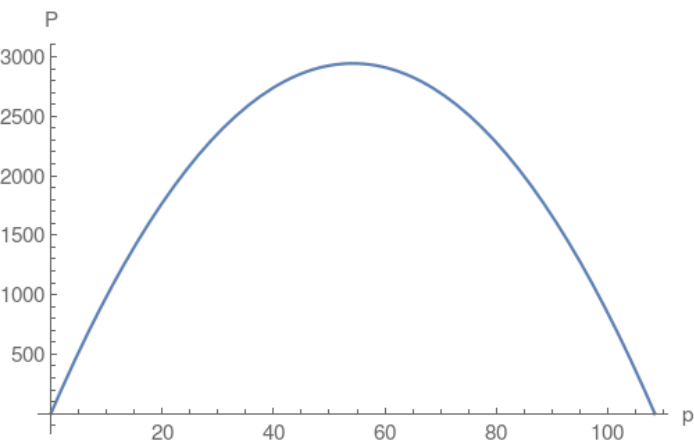
3.

3. Perimeter of rectangle =  $2(p+a)=217$  where  $a$  is the length of the other edge of rectangle. Area of the rectangle is  $= p \times a$ .

Use perimeter equation

and solve for  $a = \frac{217-2p}{2}$

Then reformulate the area  $P = p \times a = \frac{217p}{2} - p^2$  which turns out to be a quadratic Parabola:



Compute the vertex  $\frac{217}{4}$  and then plug the vertex into the area which will compute the maximum area.