

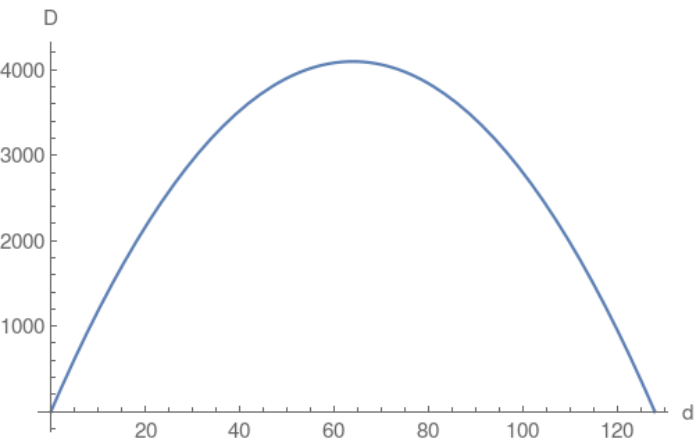
1.

1. Perimeter of rectangle =  $2(d+a)=256$  where  $a$  is the length of the other edge of rectangle. Area of the rectangle is =  $d \times a$ .

Use perimeter equation

and solve for  $a = \frac{256-2d}{2}$

Then reformulate the area  $D = d \times a = 128d - d^2$  which turns out to be a quadratic Parabola:



Compute the vertex  $\frac{256}{4}$  and then plug the vertex into the area which will compute the maximum area.