

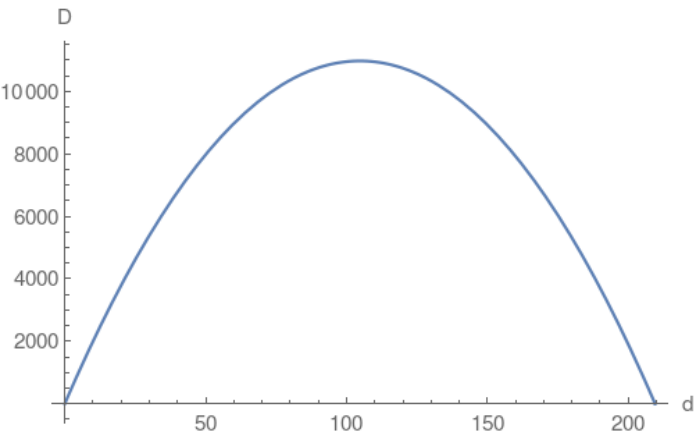
2.

2. Perimeter of rectangle = $2(d+a)=419$ 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 $a = \frac{419-2d}{2}$

Then reformulate the area $D = d \times a = \frac{419d}{2} - d^2$ which turns out to be a quadratic Parabola:



Compute the vertex $\frac{419}{4}$ and then plug the vertex into the area which will compute the maximum area.