

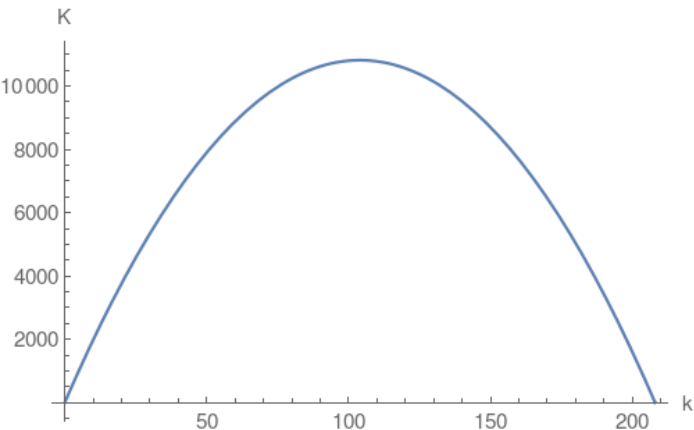
2.

2. Perimeter of rectangle = $2(k+a)=416$ where a is the length of the other edge of rectangle. Area of the rectangle is = $k \times a$.

Use perimeter equation

and solve for $a = \frac{416-2k}{2}$

Then reformulate the area $K = k \times a = 208k - k^2$ which turns out to be a quadratic Parabola:



Compute the vertex $\frac{416}{2}$ and then plug the vertex into the area which will compute the maximum area.