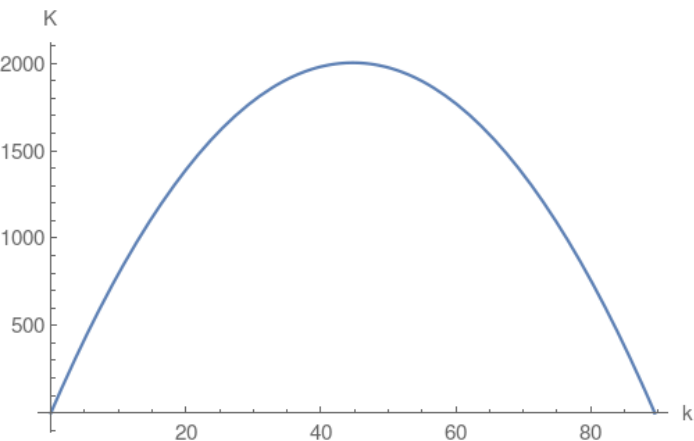# 4.

4. Perimeter of rectangle = $2(k+a) = 179$ 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 $a = \frac{179-2k}{2}$

Then reformulate the area $K = k \times a = \frac{179\,k}{2} - k^2$ which turns out to be a quadratic Parabola:

Compute the vertex $\frac{179}{4}$ and then plug the vertex into the area which will compute the maximum area.