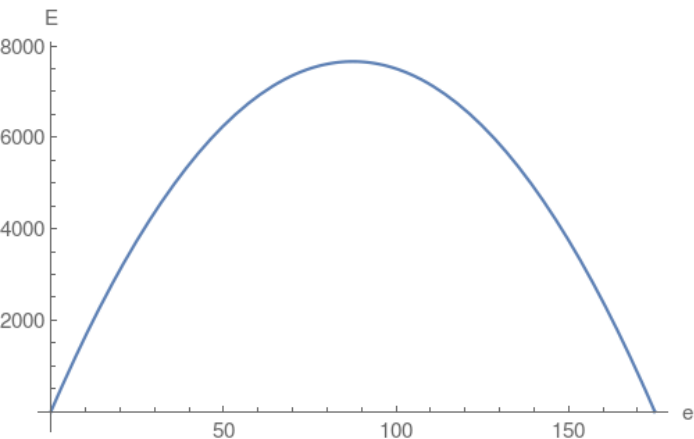# 1.

1. Perimeter of rectangle = $2(e+a) = 350$ where a is the length of the other edge of rectangle. Area of the rectangle is = $e \times a$.
Use perimeter equation
and solve for $a = \frac{350-2e}{2}$

Then reformulate the area $E = e \times a = 175e - e^2$ which turns out to be a quadratic Parabola:

Compute the vertex $\frac{350}{4}$ and then plug the vertex into the area which will compute the maximum area.