

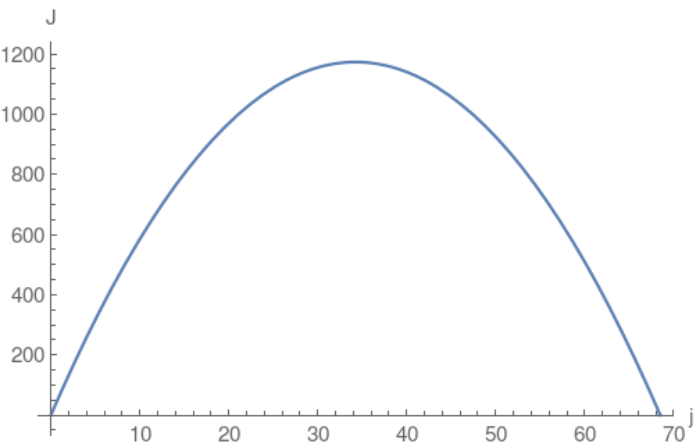
3.

3. Perimeter of rectangle = $2(j+a)=137$ where a is the length of the other edge of rectangle. Area of the rectangle is $= j \times a$.

Use perimeter equation

and solve for $a = \frac{137-2j}{2}$

Then reformulate the area $J = j \times a = \frac{137j}{2} - j^2$ which turns out to be a quadratic Parabola:



Compute the vertex $\frac{137}{4}$ and then plug the vertex into the area which will compute the maximum area.