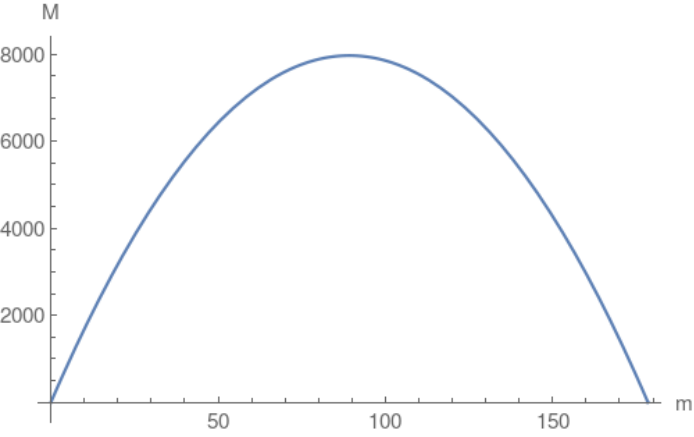
1.

1. Perimeter of rectangle $= 2(m+a) = 357$ where a is the length of the other edge of rectangle. Area of the rectangle is $= m \times a$.
Use perimeter equation
and solve for $a = \frac{357-2m}{2}$

Then reformulate the area $M = m \times a = \frac{357\,m}{2} - m^2$ which turns out to be a quadratic Parabola:



Compute the vertex $\frac{357}{4}$ and then plug the vertex into the area which will compute the maximum area.