1.

1. Since the fences enclose a rectangular plot without one side, two sides have length b and one side has length a:

$a+b+b=1595 \implies a=1595-2b$

the area:

$\text{area}=a\times b=(l-2b)\,b=\ 1595\,b-2\,b^2$

Note that the formula is for parabola. Now compute the vertex:

$\text{vertex}=\ \left(\frac{1595}{4}\ \text{m}\ ,\ \frac{2\,544\,025}{8}\ \text{m}^2\ \right)$

Square the unit for vertex's vertical coordinate since it is a quadratic.