3.

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

$a+b+b=3956 \implies a=3956-2b$

the area:

$area=a \times b=(l-2b)b= 3956\,b - 2\,b^2$

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

$vertex= (989 \text{ feet} , 1956\,242 \text{ feet}^2)$

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