2.

2. There are 3 sides to fence, two sides with length b and one side with length a:

$a + b + b = 1176 \implies a = 1176 - 2b$

Now find the area:

$area = a \times b = (l - 2b)b = 1176\,b - 2\,b^2$

Notice the Parabolic formula, find the vertex:

vertex = $(294 \text{ m}, 172872 \text{ m}^2)$

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