4.

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

$a + b + b = 1386 \implies a = 1386 - 2b$

the area:

$area = a \times b = (l - 2b)b = 1386\,b - 2\,b^2$

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

$vertex = (\frac{693}{2}$ meters $, \frac{480\,249}{2}$ meters$^2)$

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