4.

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

$a+b+b=1382 \implies a=1382-2b$

the area:

$area=a\times b=(l-2b)b= 1382\,b - 2\,b^2$

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

$vertex= (\frac{691}{2}$ meters $, \frac{477\,481}{2}$ meters^2)

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