4.

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

$a + b + b = 2465 \implies a = 2465 - 2b$

Now find the area:

$area = a \times b = (l - 2b)b = 2465\,b - 2\,b^2$

Notice the Parabolic formula, find the vertex:

$vertex = (\frac{2465}{4}\ m\ ,\ \frac{6\,076\,225}{8}\ m^2\ )$

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