4.

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

$a+b+b=4820 \implies a=4820-2b$

the area:

$area=a \times b=(l-2b)\,b= 4820\,b - 2\,b^2$

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

$vertex= (1205 \text{ yd} , 2\,904\,050 \text{ yd}^2)$

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