4.

4. Since the fences enclose a rectangular plot without one side, two sides have
length b and one side has length a:
$a + b + b = 4836 \implies a = 4836 - 2b$
the area:
$area = a \times b = (l - 2b) b = 4836 b - 2 b^2$
Note that the equation is for parabola. Now compute the vertex:
vertex = $(1209 \text{ yards} , 2923362 \text{ yards}^2)$

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