

4.

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

$$a+b+b=1893 \implies a=1893-2b$$

the area:

$$\text{area}=a \times b = (1893-2b)b = 1893b - 2b^2$$

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

$$\text{vertex} = \left(\frac{1893}{4} \text{ meters}, \frac{3583449}{8} \text{ meters}^2 \right)$$

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