

4.

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

$$a+b+b=4783 \Rightarrow a=4783-2b$$

Now compute the area:

$$\text{area}=a \times b = (4783-2b)b = 4783b - 2b^2$$

Notice the Parabolic formula, compute the vertex:

$$\text{vertex} = \left( \frac{4783}{2} \text{ meters}, \frac{22877089}{8} \text{ meters}^2 \right)$$

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