

4.

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

$$a+b+b=4666 \Rightarrow a=4666-2b$$

Now solve for the area:

$$\text{area}=a \times b = (4666-2b)b = 4666b - 2b^2$$

Notice the Parabolic equation, solve for the vertex:

$$\text{vertex} = \left(\frac{2333}{2} \text{ meters}, \frac{5442889}{2} \text{ meters}^2 \right)$$

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