

4.

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

$$a+b+b=2290 \implies a=2290-2b$$

the area:

$$\text{area}=a \times b = (1-2b) b = 2290 b - 2 b^2$$

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

$$\text{vertex} = \left(\frac{1145}{2} \text{ m} , \frac{1311025}{2} \text{ m}^2 \right)$$

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