

4.

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

$$a+b+b=3590 \implies a=3590-2b$$

the area:

$$\text{area}=a \times b = (1-2b) b = 3590 b - 2 b^2$$

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

$$\text{vertex} = \left( \frac{1795}{2} \text{ yards}, \frac{3222025}{2} \text{ yards}^2 \right)$$

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