

2.

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

$$a+b+b=2511 \implies a=2511-2b$$

the area:

$$\text{area}=a \times b = (1-2b)b = 2511b - 2b^2$$

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

$$\text{vertex} = \left( \frac{2511}{4} \text{ ft}, \frac{6305121}{8} \text{ ft}^2 \right)$$

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