

4.

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

$$a + b + b = 1824 \implies a = 1824 - 2b$$

the area:

$$\text{area} = a \times b = (1824 - 2b)b = 1824b - 2b^2$$

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

$$\text{vertex} = (456 \text{ ft}, 415872 \text{ ft}^2)$$

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