

4.

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

$$a + b + b = 1516 \implies a = 1516 - 2b$$

the area:

$$\text{area} = a \times b = (1516 - 2b)b = 1516b - 2b^2$$

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

$$\text{vertex} = (379 \text{ yards}, 287282 \text{ yards}^2)$$

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