

4.

4. There are 3 sides to fence, two sides with length  $b$  and one side with length  $a$ :

$$a+b+b=3942 \Rightarrow a=3942-2b$$

Now solve for the area:

$$\text{area}=a \times b = (1-2b) b = 3942 b - 2 b^2$$

Notice the Parabolic equation, solve for the vertex:

$$\text{vertex} = \left( \frac{1971}{2} \text{ yards}, \frac{3884841}{2} \text{ yards}^2 \right)$$

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