

4.

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

$$a+b+b=1081 \Rightarrow a=1081-2b$$

Now compute the area:

$$\text{area}=a \times b = (1-2b)b = 1081b - 2b^2$$

Notice the Parabolic function, compute the vertex:

$$\text{vertex} = \left( \frac{1081}{4} \text{ yards}, \frac{1168561}{8} \text{ yards}^2 \right)$$

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