

3.

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

$$a+b+b=2681 \Rightarrow a=2681-2b$$

Now solve for the area:

$$\text{area}=a \times b = (1-2b)b = 2681b - 2b^2$$

Notice the Parabolic function, solve for the vertex:

$$\text{vertex} = \left( \frac{2681}{4} \text{ yards}, \frac{7187761}{8} \text{ yards}^2 \right)$$

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