

2.

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

$$a+b+b=4274 \Rightarrow a=4274-2b$$

Now find the area:

$$\text{area}=a \times b = (4274-2b)b = 4274b - 2b^2$$

Notice the Parabolic function, find the vertex:

$$\text{vertex} = \left( \frac{2137}{2} \text{ ft}, \frac{4566769}{2} \text{ ft}^2 \right)$$

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