

4.

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

$$a+b+b=2924 \implies a=2924-2b$$

Now solve for the area:

$$\text{area}=a \times b = (1-2b)b = 2924b - 2b^2$$

Notice the Parabolic function, solve for the vertex:

$$\text{vertex} = (731 \text{ yd} , 1068722 \text{ yd}^2)$$

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