3.

3. Since the fences enclose a rectangular plot without one side, two sides have length b and one side has length a:

$a+b+b=3226 \implies a=3226-2b$

the area:

$area=a\times b=(l-2b)\,b= 3226\,b - 2\,b^2$

Note that the formula is for parabola. Now solve for the vertex:

$vertex= (\frac{1613}{2}$ yd $, \frac{2\,601\,769}{2}$ yd^2 $)$

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