3.

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

$a+b+b=2290 \implies a=2290-2b$

the area:

$area=a \times b=(l-2b)b= 2290\,b - 2\,b^2$

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

$vertex= (\frac{1145}{2} \text{ ft } , \frac{1311025}{2} \text{ ft}^2)$

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