3.

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

$a+b+b=1960 \implies a=1960-2b$

the area:

$area=a \times b=(l-2b)b= 1960 b - 2 b^2$

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

$vertex= (490 \text{ yards} , 480200 \text{ yards}^2)$

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