3.

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

$a+b+b=4270 \implies a=4270-2b$

the area:

$area=a \times b = (l-2b)b = 4270\,b - 2\,b^2$

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

$vertex = (\frac{2135}{2}\ feet\ ,\ \frac{4\,558\,225}{2}\ feet^2\ )$

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