2.

2. There are 3 sides to fence, two sides with length b and one side with length a:
$a+b+b=3408 \implies a=3408-2b$
Now find the area:
$area=a \times b=(l-2b)b= 3408\,b - 2\,b^2$
Notice the Parabolic formula, find the vertex:
$vertex= (852\ yd\ ,\ 1451808\ yd^2)$
Square the unit for vertex's vertical coordinate since it is a quadratic.