3.

3. There are 3 sides to fence, two sides with length b and one side with length a:

$a+b+b=2354 \implies a=2354-2b$

Now compute the area:

$area=a\times b=(l-2b)b= 2354\,b - 2\,b^2$

Notice the Parabolic equation, compute the vertex:

vertex$= (\frac{1177}{2}$ yards , $\frac{1385\,329}{2}$ yards^2)

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