3.38

a.)

this means that it would be ≡ a mod p which satisfies the proof.

b.) i.) a = 116 , p = 587

ii.) a = 3217, p = 8672

III.) a = 9109, p = 10663

So we check 3502^2 mod 587 actually equals 1554 mod 10663.This means that this is not a quadratic residue modulo of 10663. However you can see that 3502^2 mod 10663 is actually equal to

-9109 mod 10663.