3.41

a) N = 1842338473, a = 1532411781

Since the ciphertext is not a quadratic residue to p then **plaintext = 1**

The ciphertext is a quadratic residue to p so **plaintext = 0**

The cipher text is not a quadratic residue to p so **plaintext = 1**

b) N = 3149, a = 2013

N = pq = 47\*67

The cipher text is not a quadratic residue to p so **plaintext = 1**

The ciphertext is a quadratic residue to p so **plaintext = 0**

The ciphertext is a quadratic residue to p so **plaintext = 0**

c) N = 781044643, a = 568980706

r =705130839, m = 1

**C = 517254876**

r = 631364468, m = 1

**C = 4308279**

r = 67651321, m = 0

**C =660699010**