Attendance Quiz # 16 for Dr. Z.'s Number Theory Course for Oct. 31, 2013

NAME: (print!) _____

E-MAIL ADDRESS: (print!) _____

1. For the following primes p and q (let $n = pq$) public key e, and encrypted message c

(i) Check that e is an OK key, i.e. that it is coprime to $\phi(n)$.

(ii) Find the deciphering key, d, such that $de \equiv 1 \pmod{\phi(n)}$

(iii) Suppose Alice sent you the encrypted message c. Check that this is an OK message (coprime to n), and if it is find her original message?, m

$$p = 5, q = 7, e = 5, c = 9 \quad .$$