

Math 132- Written HW Cryptography

This assignment is due on Tuesday, April 30th in class. Show all work!
Answers magically appearing will receive no credit.

1. Suppose you and a friend set up an RSA encryption scheme with the two primes $p = 3$ and $q = 11$ and translate letters into numbers using a MOD 26 alphabet scheme.
 - a. Find m and f .
 - b. Using the enciphering exponent $e = 7$, encipher the message “FUN” as individual letters.
(Answer for ciphertext is 14 26 7)
 - c. Find the deciphering exponent d .
 - d. Using the deciphering exponent d , decipher the message that was sent as 27 11 0 18.
2. Suppose you and a friend set up an RSA encryption scheme with the two primes $p = 5$ and $q = 7$ and translate letters into numbers using a MOD 26 alphabet scheme.
 - a. Find m and f .
 - b. Using the enciphering exponent $e = 5$, encipher the message “BILL” as individual letters.
(Answer for ciphertext is 1 8 16 16)
 - c. Find the deciphering exponent d .
 - d. Using the deciphering exponent d , decipher the message that was sent as 13 9 8 16.