CSE 651 Homework 1
Due: Monday, April 12 by class time

1. Do Problem 2.5 of Stallings (4th or 5th edition). You only have to answer (a) and give the plaintext. (Hint: the encryption algorithm is one of those we have discussed in class.)

2. Do Problem 2.10 of Stallings (4th or 5th edition).

3. Do Problem 2.11 of Stallings (4th or 5th edition). (In part c, state a condition under which two Playfair matrices are equivalent (i.e., representing the same cipher).)


5. The ciphertext “USAXCYKUSAPNUQMQHIJESXKYHVS” was produced by a Vigenere cipher. What is the likely key length?

6. Vigenere cipher is a polyalphabetic cipher that uses multiple Cesar ciphers. Design a polyalphabetic cipher that uses multiple Playfair ciphers.

7. Do Problem 2.20 on the 5th edition (or 2.21 on the 4th edition) of Stallings. This question is about steganography. The key is a sequence of single-digit integers, namely 7, 8, 7, 6, 5, 6, 5, 4, …

Hint: what do these single-digit integers indicate?