

CSE 651 Homework 1

Due: Monday, April 13 by class time

1. Do Problem 2.10 on page 58 of Stallings.
2. Do Problem 2.11 on page 58 of Stallings. (In part c, state a condition under which two Playfair matrices are equivalent (i.e., representing the same cipher).)
3. Do Problem 2.18 on page 59 of Stallings.
4. The ciphertext “USAXCYKUSAPNUCOQMHIJESXKYHVS” was produced by a Vigenere cipher. What is the likely key length?
5. Vigenere cipher is a polyalphabetic cipher that uses multiple Cesar ciphers. Design a polyalphabetic cipher that uses multiple Playfair ciphers.
6. Do Problem 2.21 on page 60 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?