Homework 7

Problem 1
Solve each of the following problems from Denning:

a) Problem 1.5 on page 54.

b) Problem 1.6 on page 54.

Problem 2
Estimate the unicity distance for DES when used in Electronic Codebook Mode, for each of the following situations:

a) Plaintext is standard English.

b) Plaintext is "random ASCII" (ASCII characters chosen at random, independently with uniform distribution).

c) Plaintext is "ASCII English" (standard English written in ASCII characters).

Throughout, "ASCII" refers to the standard seven-bit ASCII code, represented with eight bits, with a parity bit as the eighth-bit.