2.993: Principles of Internet Computing
Homework #8
Due: 4/27/99

1. *Huffman Code* What is the optimal Huffman code for the following set of frequencies:

a) a: 1 b: 1   c:2   d:3   e: 5   f:8   g:13   h:21

b) a: 1 b: 1   c:2   d:3   e: 7   f:7   g:13   h:21

c) In each case, is your code unique? Explain.

2. *Prefix Code* Suppose you are given a set of possible codeword lengths for characters $a_1, a_2, ..., a_5$: $l_1 = 2, l_2 = 4, l_3 = 6, l_4 = 7, l_5 = 9$. Is there a (binary) prefix code with such codeword lengths? If so, give one. If not, explain why it is not possible.