

Name _____ UIN _____

Quiz 2
CPSC 411 Spring 2009

Problem 1 (1 point)

What is the time complexity of the naive algorithm to multiply two $n \times n$ matrices?

Problem 2 (1 point)

What is the time complexity of Strassen's algorithm to multiply two $n \times n$ matrices?

Problem 3 (1 point)

What is the purpose of using a Huffman code?

Problem 4 (2 points)

Derive the Huffman tree using Huffman's algorithm for the alphabet

$$A = \{a, b, c, d\}$$

when the frequencies are given by

$$f(a) = 1000, f(b) = 3000, f(c) = 2000, \text{ and } f(d) = 5000.$$

The minimum priority queue Q has initially the state 1) and after each iteration of Huffman's algorithm the states 2), 3), and 4).

1) $Q =$

2) $Q =$

3) $Q =$

4) $Q =$