

CSI 35, Homework 11 on sections 11.1, 11.2

Due by Wed, Nov 30.

Here are eight questions for you to try with some from the book. Write all your working out and answers on your own notepaper. Please use lots of space. It is very important that you show clearly any work you had to do to get your answers.

- (1) Page 755, Question 4
 - (2) The saturated hydrocarbon pentane has chemical formula C_5H_{12} . Draw two different possible arrangements of the hydrogen and carbon atoms of pentane. (Your two arrangements should be non-isomorphic trees, called isomers.)
 - (3) Page 756, Question 20
 - (4) Page 769, Question 2
 - (5) Page 770, Question 19
 - (6) Page 770, Question 22 parts (a), (b) only
 - (7) For the sentence "ones on soon":
 - (a) Find the frequency of each of the letters e, n, o, s in the sentence.
 - (b) Then make a Huffman code for these letters.
 - (c) Use your Huffman code to encode the sentence as a bit string.
 - (d) Show that the average number of bits to encode a letter is 1.9
 - (8) Page 770, Question 24
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If you understand the homework questions then you will be able to do the exam questions. You can also try the other questions listed on the syllabus to get extra practice. For any difficulties with the homework, please email me, come to my office hours or try the Math Tutoring Lab.