

MATH 4280 – Hurley – homework problem January 30, 2008

1. Let S be a source with probabilities $\frac{1}{3}, \frac{1}{3}, \frac{1}{4}, \frac{1}{12}$.
 - (a) What is the average word length of a binary optimal code for S ?
 - (b) What are the possible word lengths l_1, l_2, l_3, l_4 for a binary optimal code for C ?
 - (c) Describe all the binary optimal codes for S . (Consider both the possible sets of code words and the possible functions from S to the set of code words.) How many are there?
 - (d) Which of the binary optimal codes for S are Huffman code?