

Mathematics for Computer Science, CM0167,
Example class, Week 5,
Dr David Marshall

1. Using the *Binary Tree Sort Algorithm* sort the following sequence of numbers:
2 4 6 1 3 5 8
2. Using the *Huffman Coding Algorithm* code the following sequence of characters:
ABBABBACCAADD
3. A *forest* is a graph (not necessarily connected), each of whose components is a tree.
 - (a) Let G be a forest with n vertices and k components. How many edges does G have?
 - (b) Is it true that every forest with k components has at least $2k$ vertices of degree 1?
 - (c) Construct a forest with 9 vertices and 6 edges in which there are less than six vertices of degree 1.