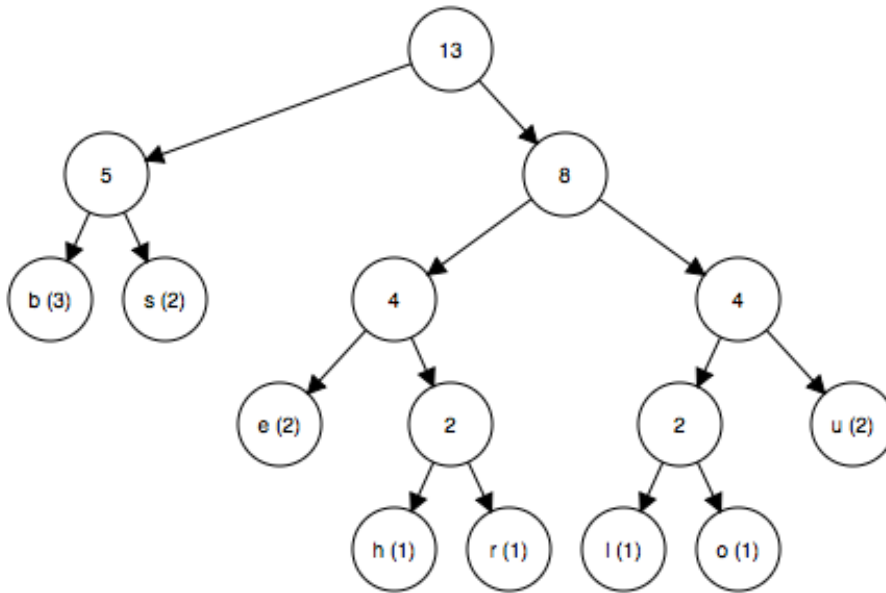


# Huffman Tree Diagrams

Not every Huffman Tree has one node to the left.

The place name "blubberhouses" has been encoded using a Huffman Tree:



a) How many letters are in the place name "blubberhouses"? How do you know this from looking at the Huffman Tree?

b) Write in the binary coding numbers on the Huffman Tree. Remember: 0 always goes to the left on exam board Huffman Trees.

c) Complete the table to show the Huffman Coding for each character.

Character	Huffman Coding
b	
s	
e	
u	

Character	Huffman Coding
h	
r	
l	
o	

d) Write down the Huffman Coding for "blubberhouses" (i.e. write down the binary digits used to encode it)

e) Calculate:

- i. the number of bits needed to store "blubberhouses" using 7-bit ASCII coding
- ii. the number of bits needed to store blubberhouses using Huffman Coding
- iii. the space saving made by using Huffman Coding