Problem 5

Letter	Frequency	Encode
A	20	00
B	29	10
C	10	010
D	2	111110
E	3	111111
F	4	11110
G	9	1110
H	11	011
I	12	110

Total bits:

20*2 + 29*2 + 10*3 + 2*6 + 3*6 + 4*5 + 9*4 + 11*3 + 12*3 = 283

The result is :

(('A', ('C', 'H')), ('B', ('I', ('G', ('F', ('D', 'E'))))))