

Question 7

Question 2

Node	g(n)	Path
E	0	E
D	1	E->D
C	3	E->D->C
B	3	E->D->B
H	3	E->D->H
A	10	E->D->B->A
I	5	E->I
G	8	E->D->H->G
P	14	E->D->B->A->P
L	15	E->D->B->A->P->L
M	8	E->D->H->M
O	9	E->D->H->G->O

Question 4

Time complexity: $O(n * m)$

Where its row iteration through the matrix

Space complexity:

$O(n * m)$

Is the space of the matrix that is taken to iterate through it.

Question 5

Time is $O(n)$ iterating through arraylist is $O(n)$

HashMap is $O(1)$ for addition of values

Space complexity

$O(n)$ for all the data structures that are created

Question 6

Time complexity

$O(n)$ to iterate through the arraylist and list using for loop

Space complexity

For the 2 arraylists $O(n)$