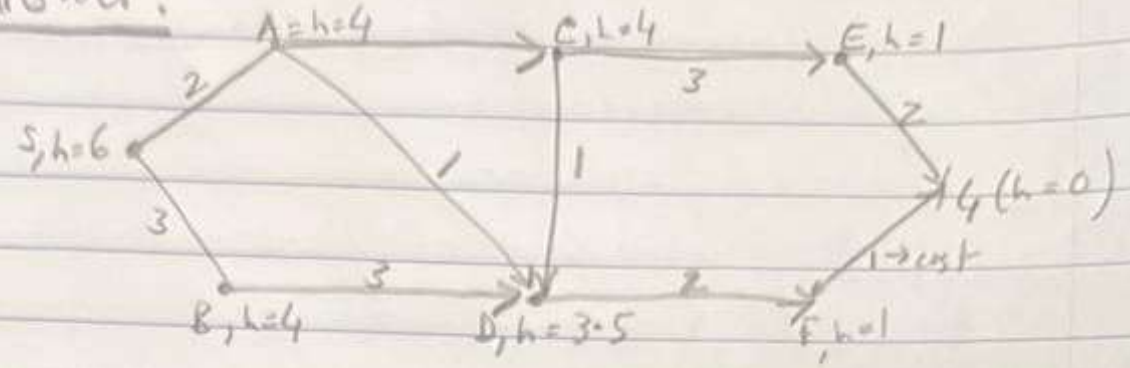
Answer:



For shortest

Iteration	Node Expanded	Priority Queue	Selection
0	—	S(6,0,6)	S
1	S	A(6,2,4), B(6,3,4)	A because of cost=2
2	A	C(4,3,4) D(4,1,3.5)	D because of cost=1
3	D	F(3.5,2,1)	F because of cost=2
4	F	G(1,1,0) Reached.	

For longest

Iteration	Node Expanded	Priority Queue	Selection
0	—	S(6,0,6)	S
1	S	A(6,2,4), B(6,3,4)	A
2	A	C(6,3,4), D(4,1,3.5)	C
3	C	D(4,1,3.5), E(4,3,1)	E
4	E	G(1,2,0)	Reached Destination

Here, A (6, 2, 4)

(S) For previous cost for Next (A)

6 → S, 2 → cost, 4 → A

(b) For A* Algorithm shortest length and cost is from 1st table.

S → A → D → F → G

2 1 2 1

cost = 2+1+2+1 = 6 (Ans)