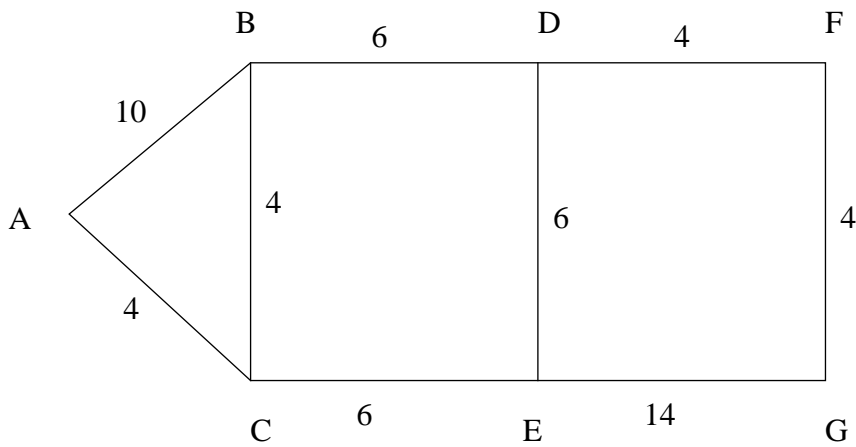
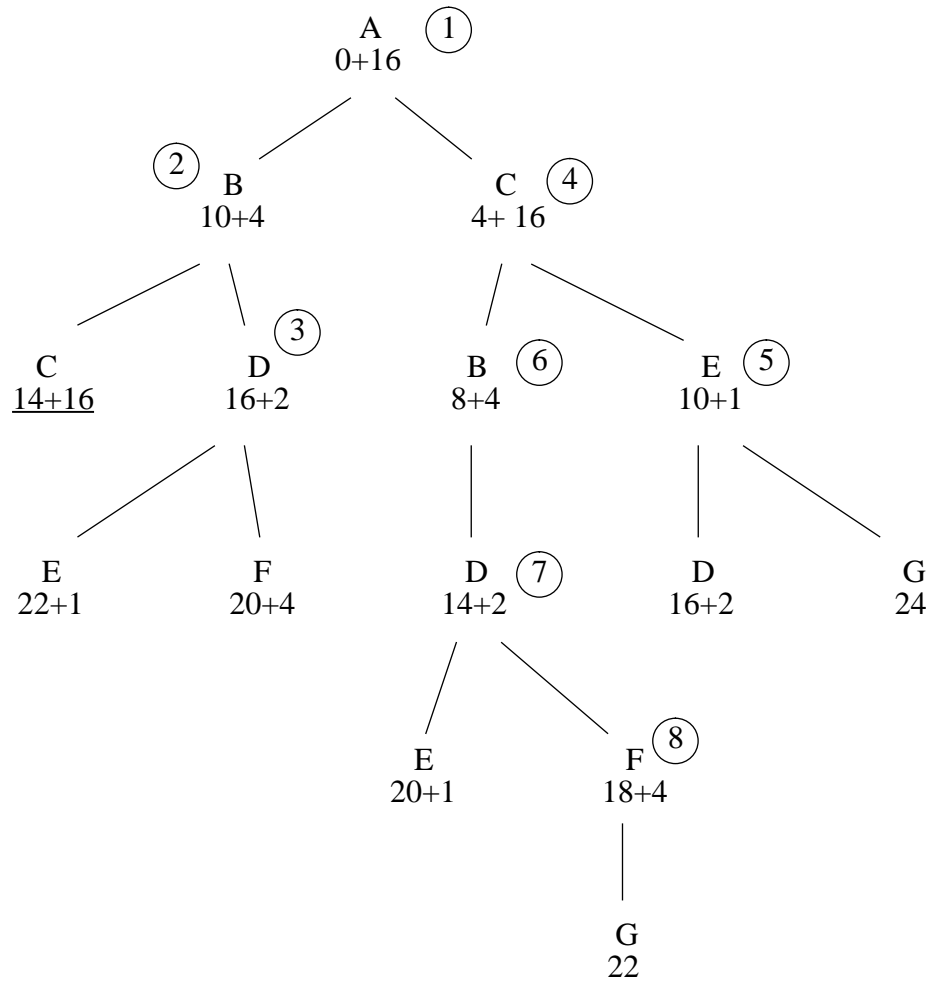


Best First Search



The distances in the picture are the real distances between the nodes. The estimated remaining distances to the goal, G are:

From A	16	(Irrelevant)	From D	2
From B	4		From E	1
From C	16		From F	4



Open	Closed
A16	A16
B14 C20	A16 B14
D18	A16 B14 D18
C20 E23 F24	A16 C20 D18
E11 B12 F24	A16 C20 E11
B12 F24 G24	A16 B12 C20 E11
D16 F24 G24	A16 B12 C20 D16 E11
F22 G24	A16 B12 C20 D16 E11F2
G22	

The heuristic function, h is not monotone, however. $h(C) = 16$, $h(B) = 4$, and $\text{cost}(C,B) = 4$, so $h(C) - h(B) > \text{cost}(C,B)$. Therefore we had the first occurrence of node D, which was later replaced by a better D.

The estimations are optimistic, so we know that the found path is the best.

But if we replace the estimated distance from F to G with 8 we get:

Open	Closed
A16	A16
B14 C20	A16 B14
D18	A16 B14 D18
C20 E23 F28	A16 C20 D18
E11 B12 F28	A16 C20 E11
B12 G24 F28	A16 B12 C20 E11
D16 G24 F28	A16 B12 C20 D16 E11
G24 F26	

Now we have G24 as the current state, so we stop the search. We have found a solution according to method A, but it is not the best one. The big estimate of F hid the best solution.