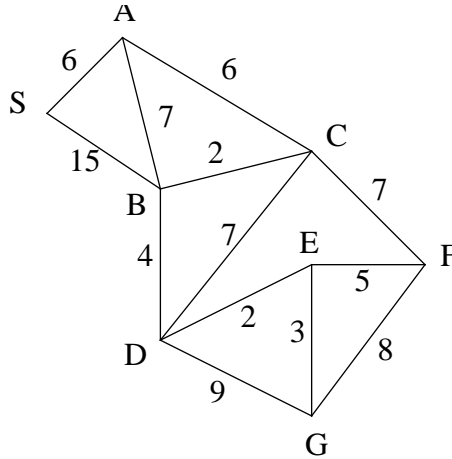


05-05-30

3) The numbers in the graph below are the real distances between the nodes. The estimated distances to the goal node, G, are the following:

A: 20 B: 14 C: 9 D: 7 E: 1 F: 3

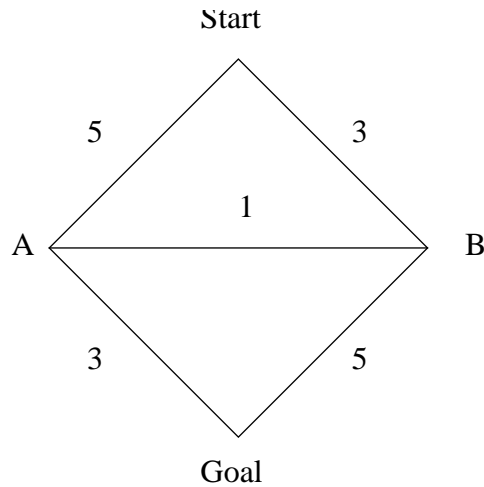
S is the start node.



Do a search with algorithm A. You can either show the successive open and closed list marked with the merit values for the nodes, or you can show the search tree, also with the values. Mark also in the tree the order in which the nodes are expanded. Can we be certain that we have found the best path? Motivate!

090115

Problem 3



In algorithm A, we have $f(n) = g(n) + h(n)$, where $h(n)$ is the estimated distance from node n to the goal. The picture above shows the real distances between the nodes. Give values to $h(A)$ and $h(B)$, so the function $f(n)$ is

- a) optimistic and monotone (2p)
- b) optimistic but not monotone (2p)
- c) not optimistic but monotone (2p)
- d) not optimistic and not monotone (2p)

If some case isn't possible explain why.

e) What does it mean for the search process if $f(n)$ is monotone and/or optimistic? (2p)