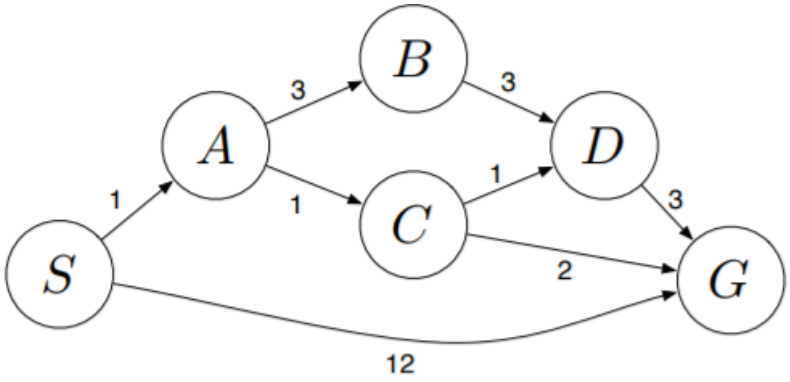
University of West London

School of Computing and Engineering

CP60034E - Artificial Intelligence

Seminar Week-6: Searching

Answer the following questions about the search problem shown here. Assume that ties are broken alphabetically. For instance, a partial plan S → X → A would be expanded before S → X → B. Node S is the 'initial state', and node G is the 'goal state'. Arrows indicate the possible actions (paths), and values show the cost of actions. Please give your answers in the form, for example, 'S–A–D–G'. (Tip: Build a search tree first).



(a) What path would breadth-first graph search return for this search problem?
(b) What path would uniform-cost graph search return for this search problem?
(c) What path would depth-first graph search return for this search problem?
(d) Consider the heuristics for this problem shown in the table below. What path would A* graph search, using a consistent heuristic, return for this search problem?

State	h
S	5
A	3
B	6
C	2
D	3
G	0