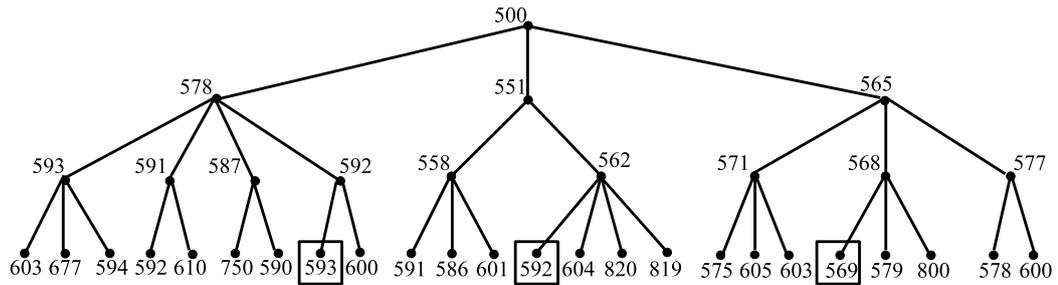


2008 Paper 3 Question 7

Artificial Intelligence I

- (a) Give a general description of the operation of the *Recursive Best-First Search* (*RBFS*) algorithm. [6 marks]
- (b) Consider the following search tree.



The numbers by the nodes denote the sum of some path cost and heuristic. The boxed nodes are goals. Describe in detail the way in which the RBFS algorithm searches this tree. Your answer should indicate the order in which nodes are expanded, the reason that this order is used, and should state which of the three goals is found and why. Note that smaller numbers represent more desirable nodes. [12 marks]

- (c) What shortcoming of the A^* algorithm does the RBFS algorithm address, and how does it achieve this? [2 marks]