Procedure AO* (Nils Nilsson)

1. Create a search graph, G, consisting solely of the start node, s. Associate with node s a cost $q(s) = h(s)$. If s is a terminal node, label s SOLVED.

2. Until s is labeled SOLVED, do:
3. begin

4. compute a partial solution graph, G', in G by tracing down the marked connectors in G from s.

5. select any nonterminal leaf node, n, of G'

6. expand node n generating all of its successors and install these in G as successors of n. For each successor nj not already in occurring in G, associate the cost $q(nj) = h(nj)$. Label SOLVED any of these successors that are terminal nodes.

7. create a sigleton set of nodes, S, containing just node n.

8. until S is empty do:
9. begin

10. remove from S a node m such that m has no descendants in G occurring in S.

11. revise the cost q(m) for m as follows: for each connector directed from m to a set of nodes {n1i,..., nki} compute $qi(m) = ci + q(n1i) +...+ q(nki)$. (The q(nji) have either just been computed in a previous pass through this inner loop or (if this is the first pass) they were computed in Step 6.) Set q(m) to the minimum over all outgoing connectors of qi(m) and mark the connector through which this minimum is achieved, erasing the previous marking if different. If all of the successor nodes through this connector are labeled SOLVED, then label node m SOLVED.

12. If m has been marked SOLVED or if the revised cost of m is different than its just previous cost, then add to S all those parents of m such that m is one of their successors through a marked connector.

13. end
14. end.