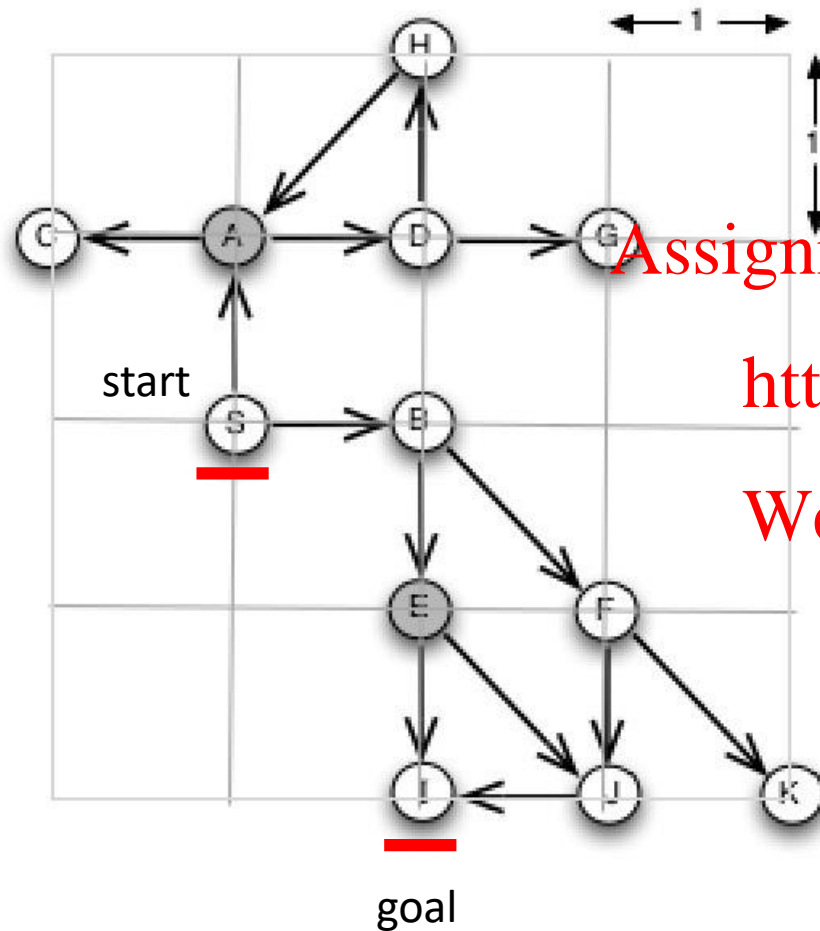


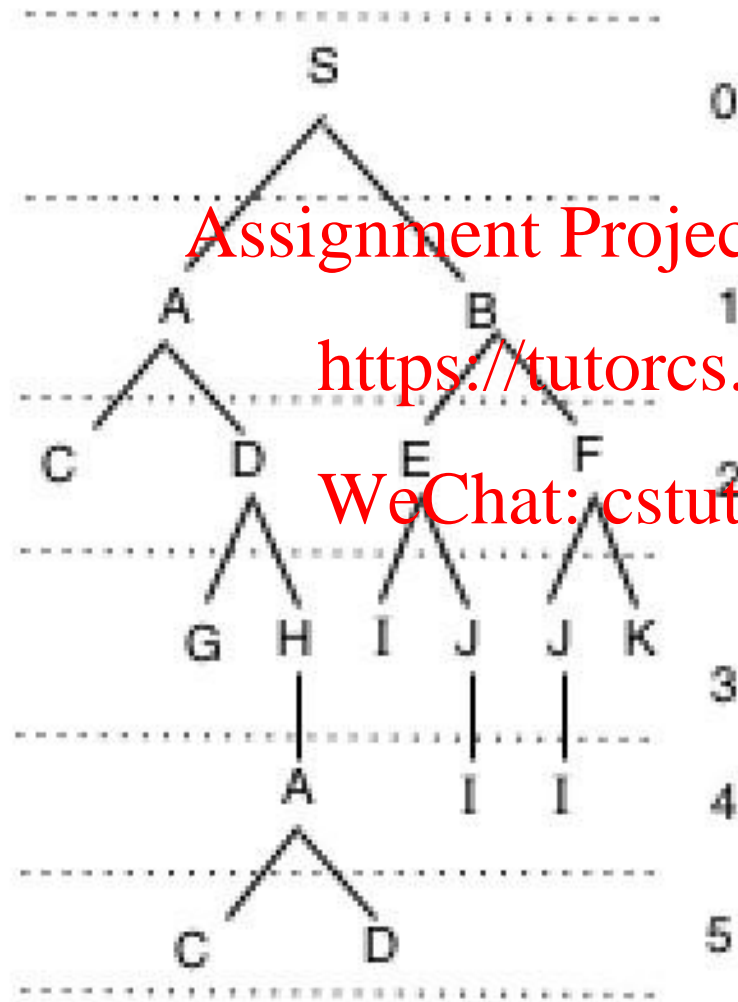
# Uninformed/informed search



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step cost = distance, but cost of path till A or E is doubled.  
(e.g. cost of path S - A is 2)

# Possible search tree



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# Uninformed search: Sample solutions

- In what order may nodes be expanded using breadth-first?
  - S-A-B-C-D-E-F-G-H-I

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- Best path (for Uniform-cost search)?
  - S-B-F-J-I

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(so breadth-first not optimal if step-cost not constant)

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- In what order may nodes be expanded using depth-first?
  - S-B-E-I.

(depth-first could loop if path starts with S-A....loop checking needed)

- Best (least) depth for depth-limited?
  - 3

# Informed search: Sample solutions

- Admissible heuristics?

- Straight line distance from any circle to the goal circle I.

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- Using

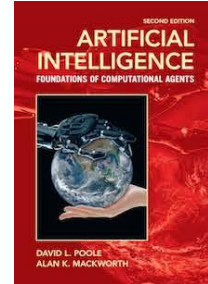
- the straight-line-distance admissible heuristic and
- step cost= distance, but cost of path till A or E is doubled

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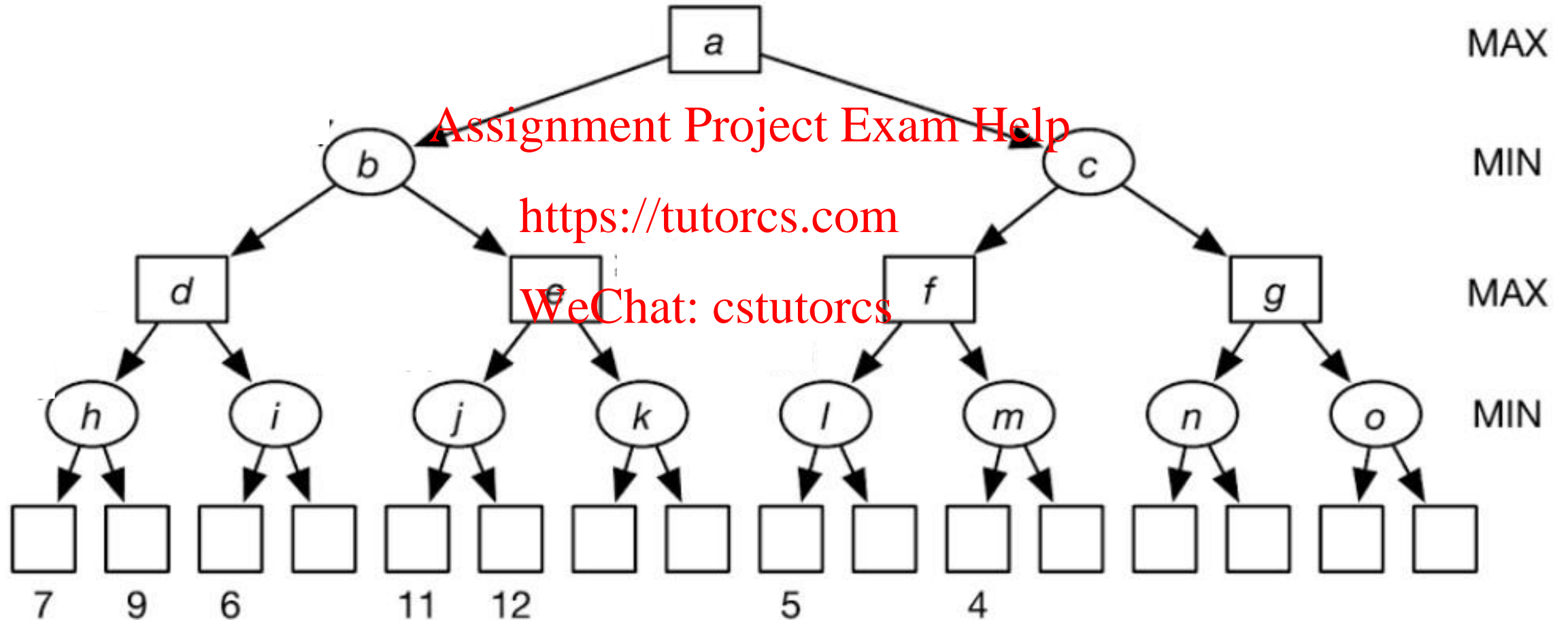
which of E and F will A\* search expand first?

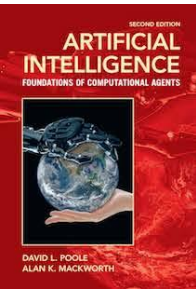
- F

# Adversarial search (minimax, $\alpha$ - $\beta$ pruning)



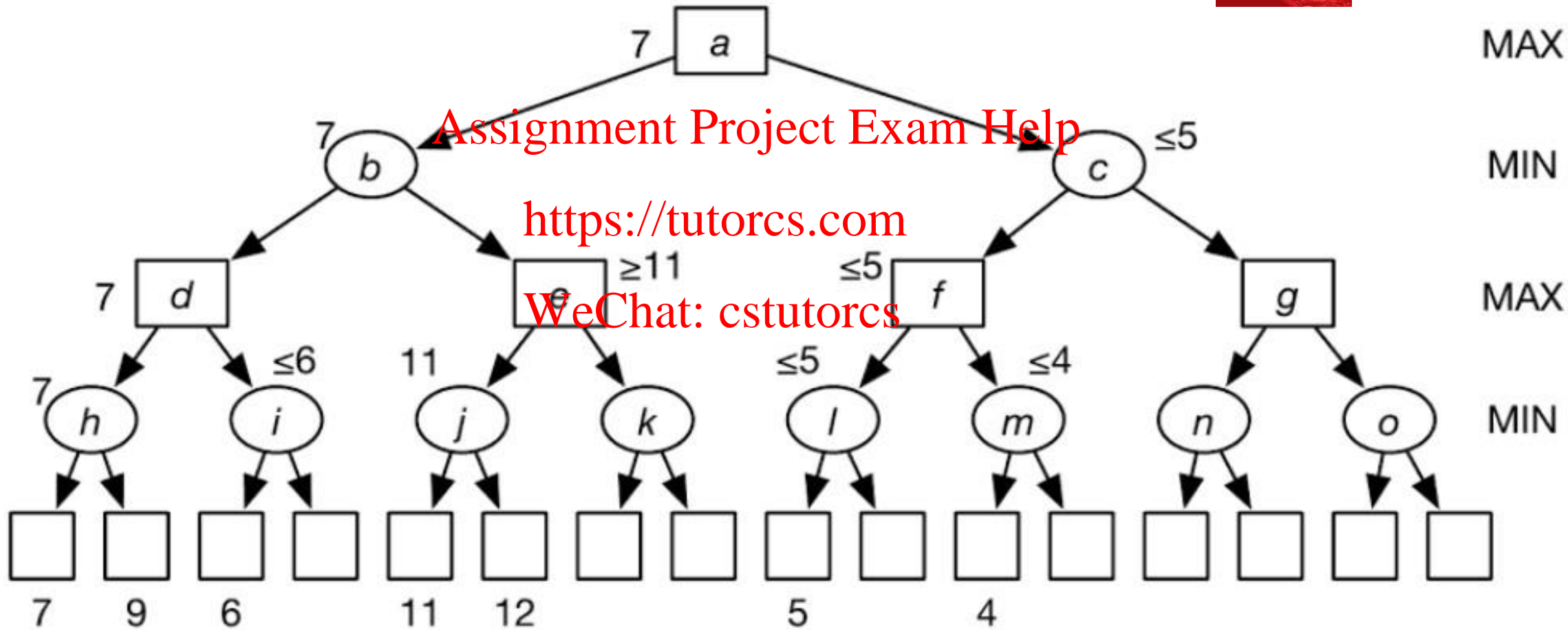
(section 11.2.2)





(section 11.2.2)

# Adversarial search (minimax, $\alpha$ - $\beta$ pruning)



# Adversarial search (minimax, $\alpha$ - $\beta$ pruning)

Check tool at:

[http://inst.eecs.berkeley.edu/~cs61b/fa14/ta-materials/apps/ab\\_tree\\_practice/](http://inst.eecs.berkeley.edu/~cs61b/fa14/ta-materials/apps/ab_tree_practice/)

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