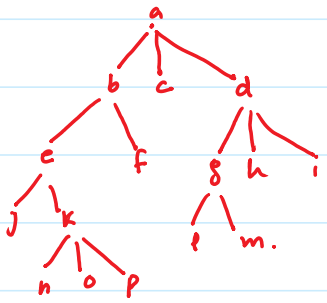
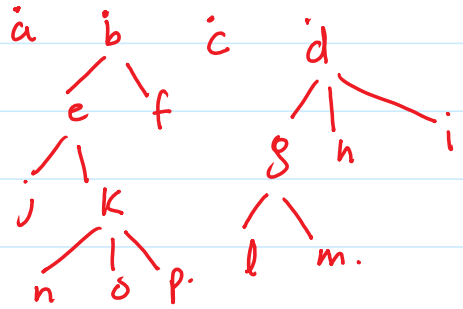
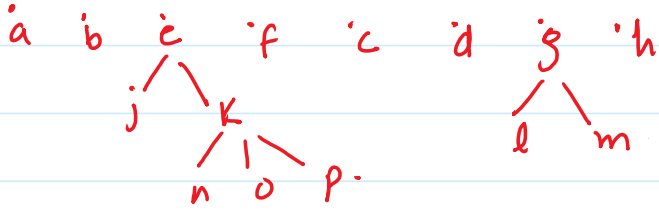
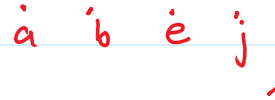
lecture 29 TREE TRAVERSAL.



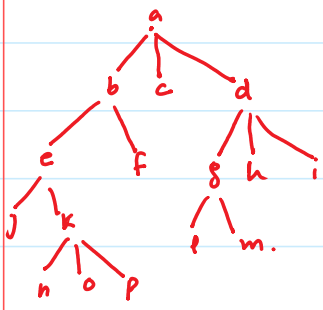
PREORDER. NLR.



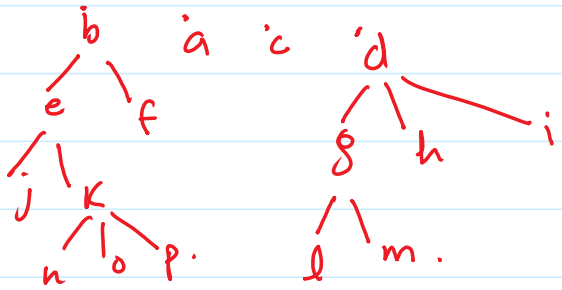


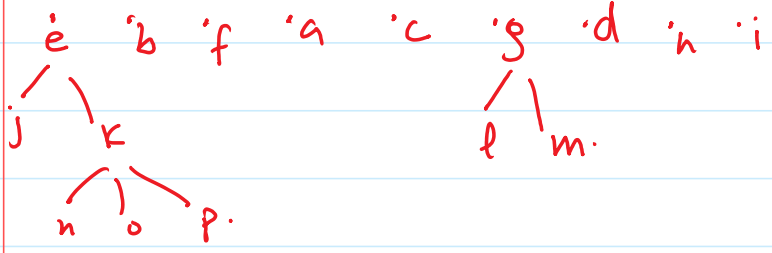


a b e j k n o p f c d g l m h i

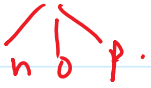


INORDER LNR.
LN(L-R).

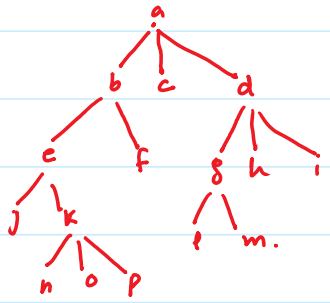




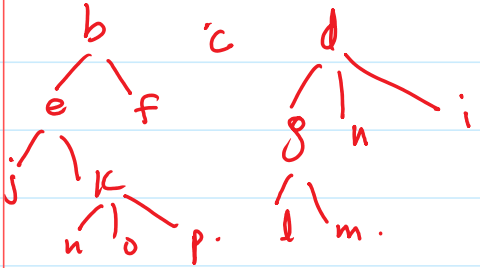
j e k b f a c l g m d n i



j e n k o p b f a c l g m d n i

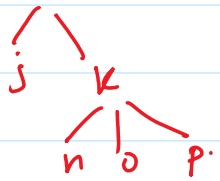


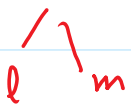
Post Order :-
LRN.



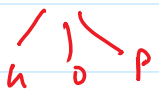
e f b c g h i d.

e f b c g h i d.





j k e f b c l m g h i d.



j n o p k e f b c l m g h i d.

Application of Tree Traversal.

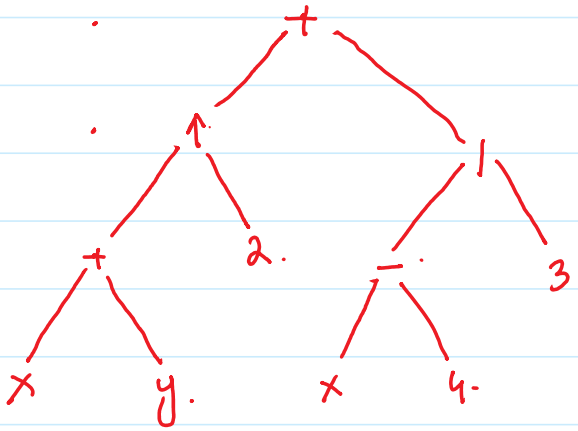
→ Expression Evaluation.

Ex:- $((x+y) \uparrow 2) + ((x-4)/3)$.

P657 Ordered rooted Tree.

operand :- x, y, 2, 4, 3

operation :- +, -, /, ↑.



LNR.

NLR.

LRN.

Polish Notation = Infix = In Order.

= Prefix = Pre Order.

Reverse Polish Notation = Postfix. = Post Order.

Ex 7:- + − * 2 3 5 / ↑ 2 3 4. $\frac{2}{3}{4}$

Ex 7:- + − * 2 3 5 / ↑ 2 3 4.

+ − * 2 3 5 / 8 . 4.

2

+ − * 2 3 5 2

+ − 6 5 2

+ 2 2

3.

Ex 9:- 7 2 3 * − 4 ↑ 9 3 / +.

7 6 − 4 ↑ 9 3 / +.

1 4 ↑ 9 3 / +.

1 9 3 / +.

1 3 +

4.

Spanning Tree:-

A Spanning tree of a Graph G.

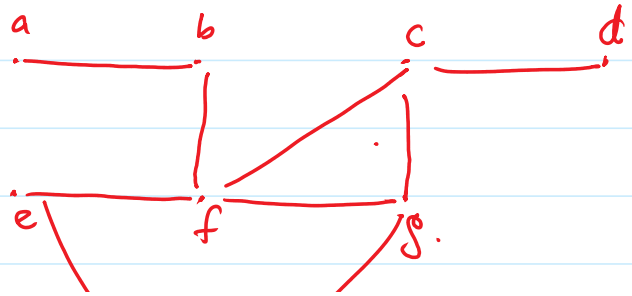
1- Subgraph of G.

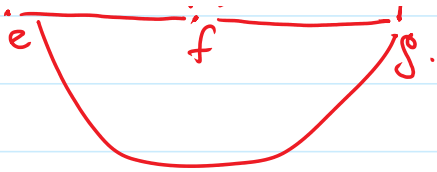
2- Contains every Vertex of G.

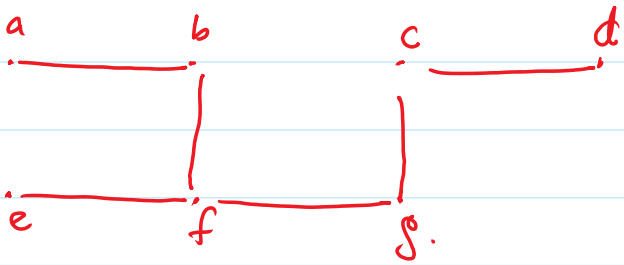
3- It is a tree.

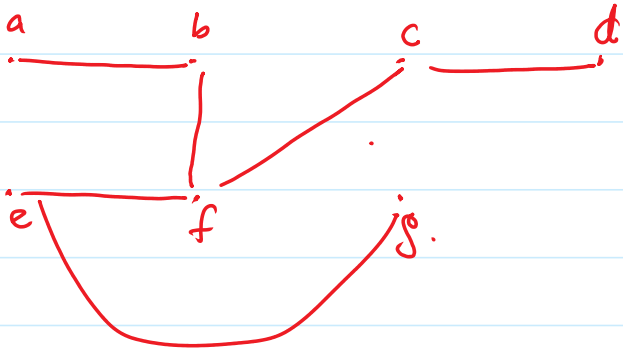
Ex 1

663

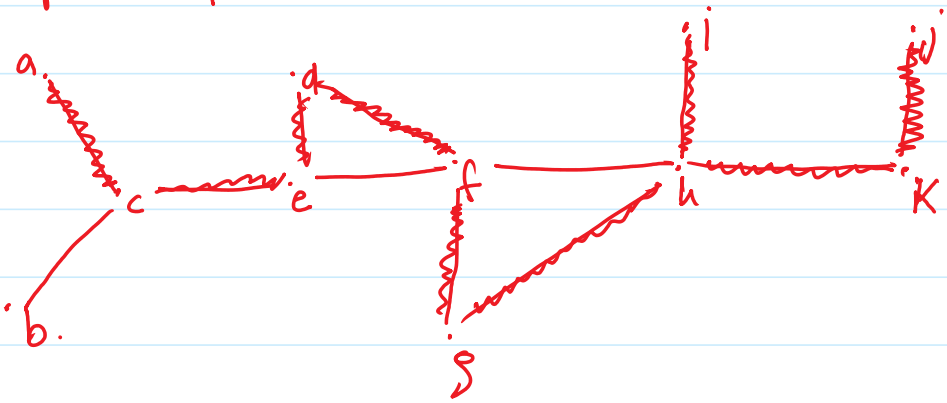




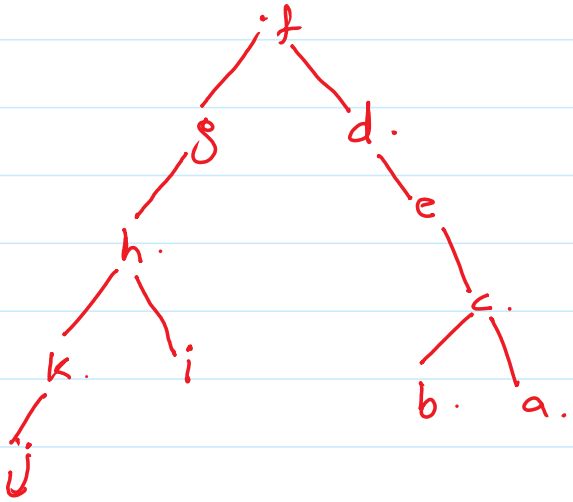




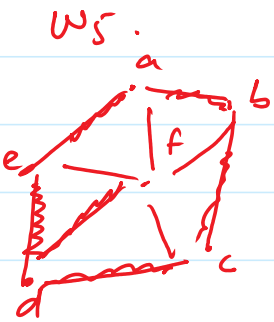
Depth first.

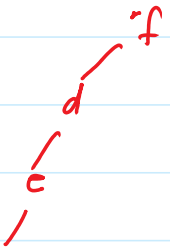


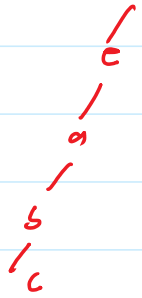
dead end.
→ Backtrack.



WS.



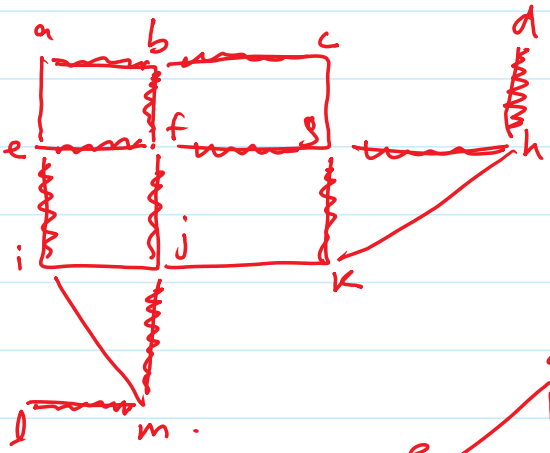


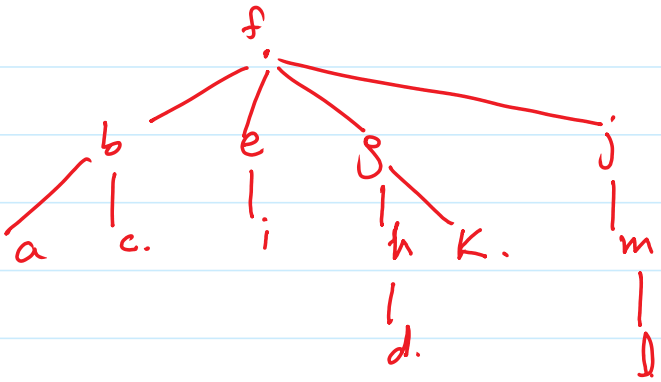


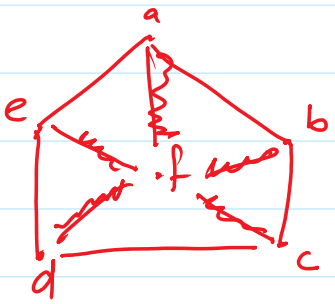
Breadth first.

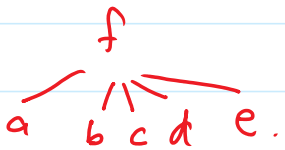
figure 9

667.

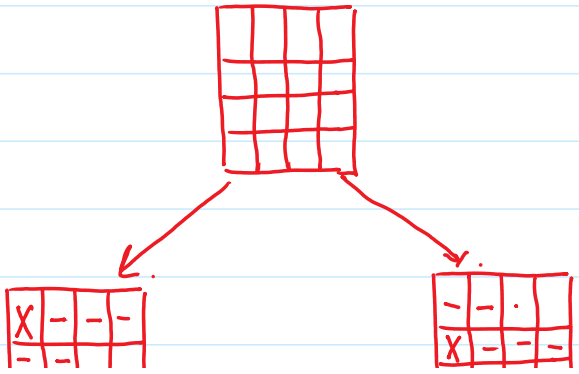


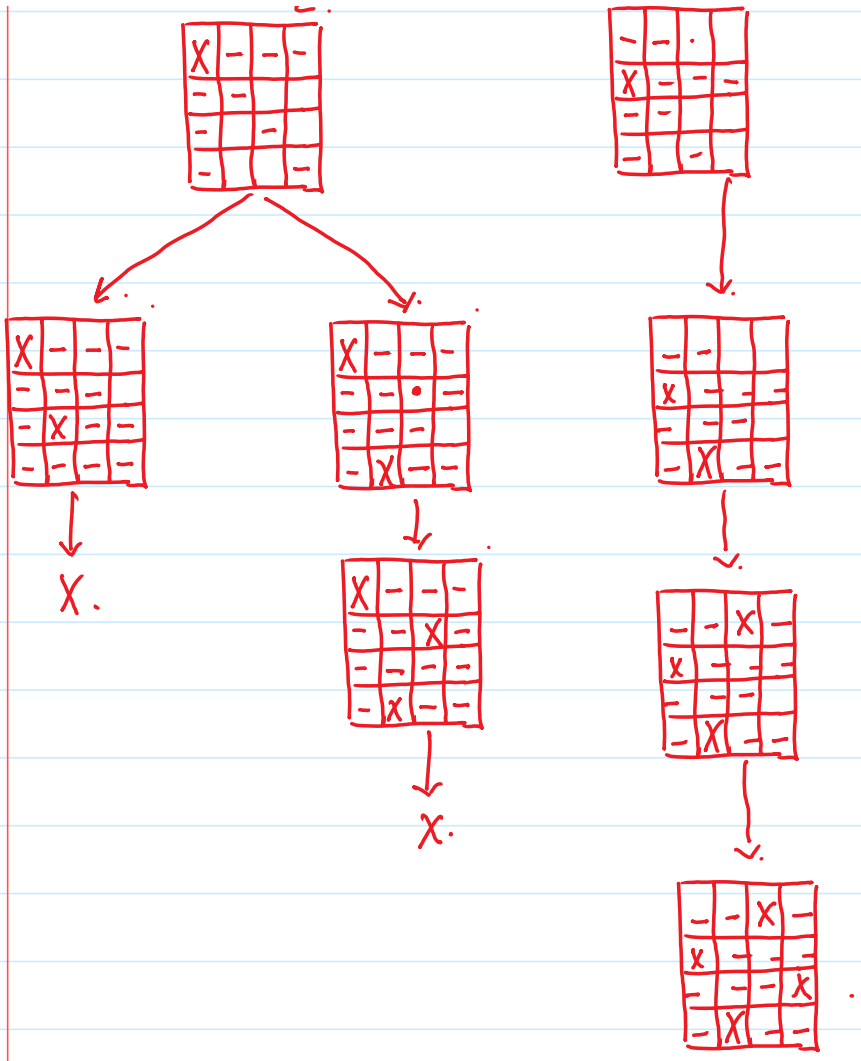






Backtracking Applications.





B x 8

671.

{31, 27, 15, 11, 7, 5}.

Subset 2 39.