Rooted Trees

leaves
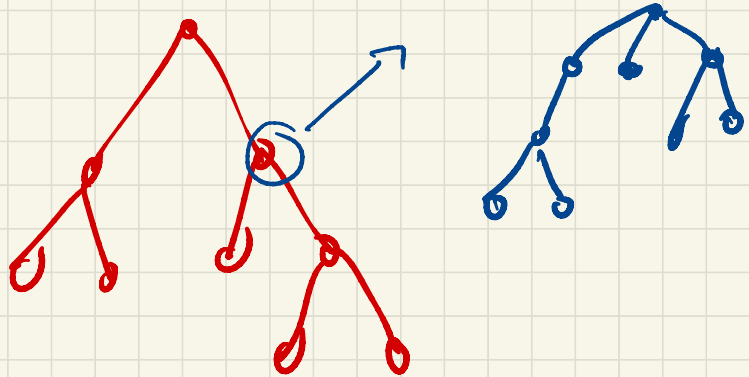
root

leaves

root

Designate a special vertex to be the **Root**
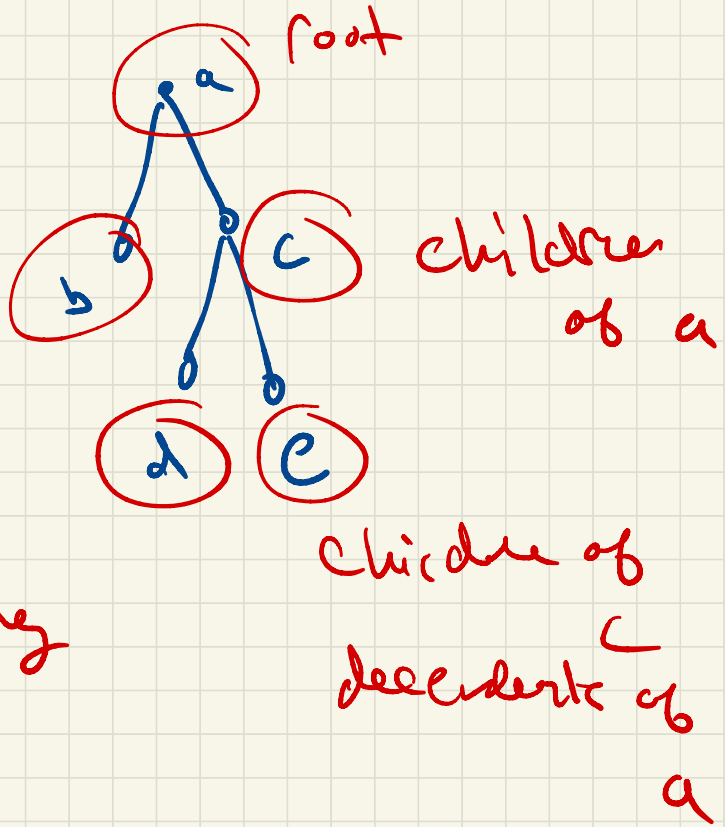
root

a

b and c
are sibling

children
of a

b   c

d   e

d and e
are sibling

children of
descendents of c
a

b d e   are leaves

Internal vertex →

← Subroot

← Subtree

Leaf vertex

4/ height

0 —————————————

1 —————————————

2 —————————————

3 —————————————

4 —————————————
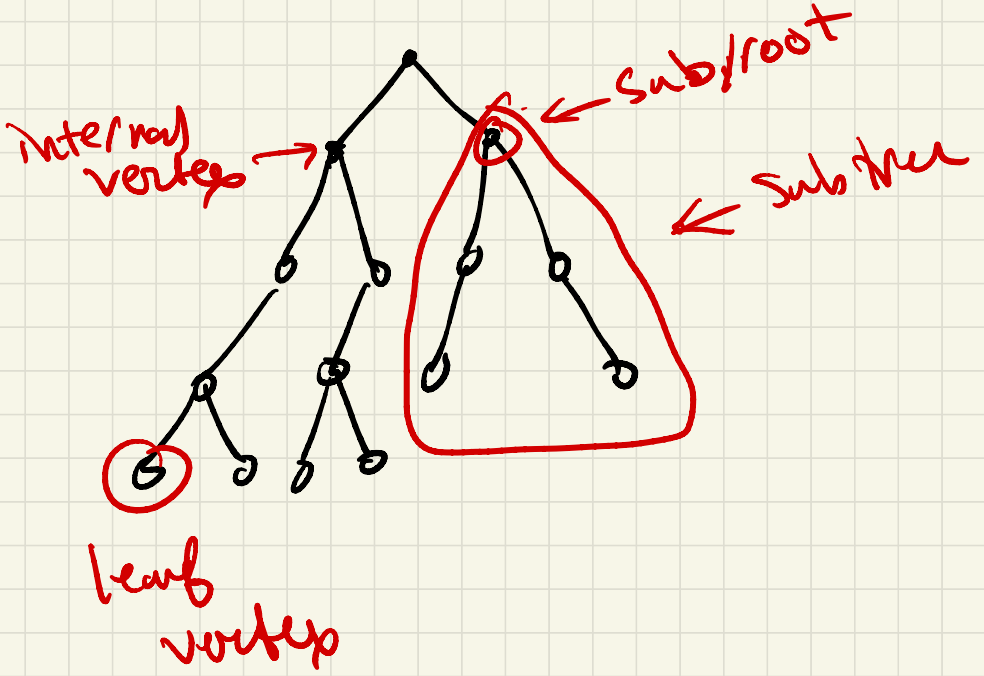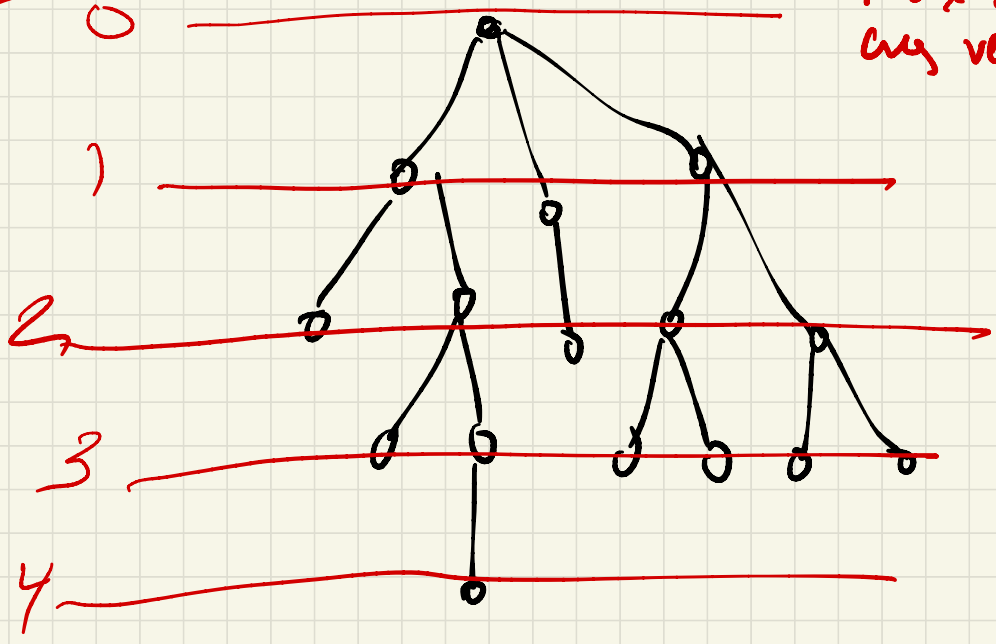
Level # edges to reach root

↑
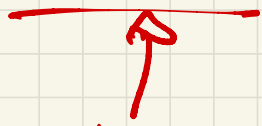
length of the path between
verta

v $\overset{1}{\bullet}$ $\overset{2}{\bullet}$ $\overset{3}{\bullet}$ 4
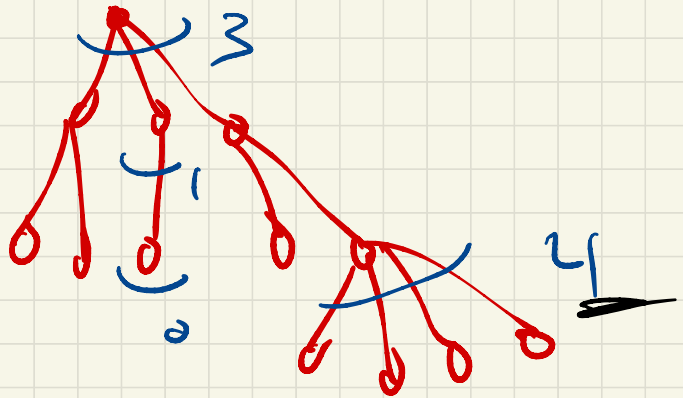
3
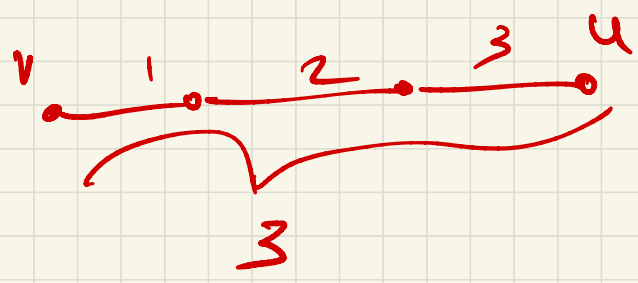
Branching Factor
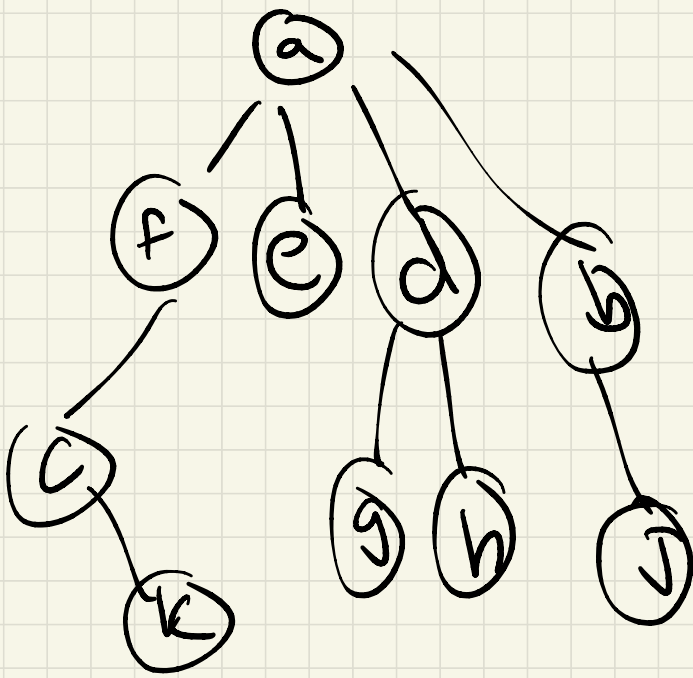
of a vertex

Branching Factor of Tree

is the **max**

branching factor of vertex

4

internal vertex
a, f, d, b, c

leaves
k, e, g, h, j

siblings of f
e, d, b

level of j
2

height of tree   3

height of subtree w/b
1

height of subtree w/e
0

Branching factor
4