HW 3

CS 260

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3.)

a). Nodes D, M, N, F, J, K L are leaves

b). root node is A

c). A is the parent of C

d). F, G, H are children of C

e). A is ancestor of B

f) I, M, N are descendents of B

g) There are no right sibling for D and G

h). J is to the left and K is to the right

i) depth of C is 1

j) height of C is 2

3.2)

There are 4 different paths of length 3

3.a).

Pre-order(n) < Pre order(m)	in order(n) < in order(m)	Post order(n) < Post order(m)
✓	✓	✓
X	X	X
X	X	X
✓	✓	X

n is to the left of m

n is to the right of m

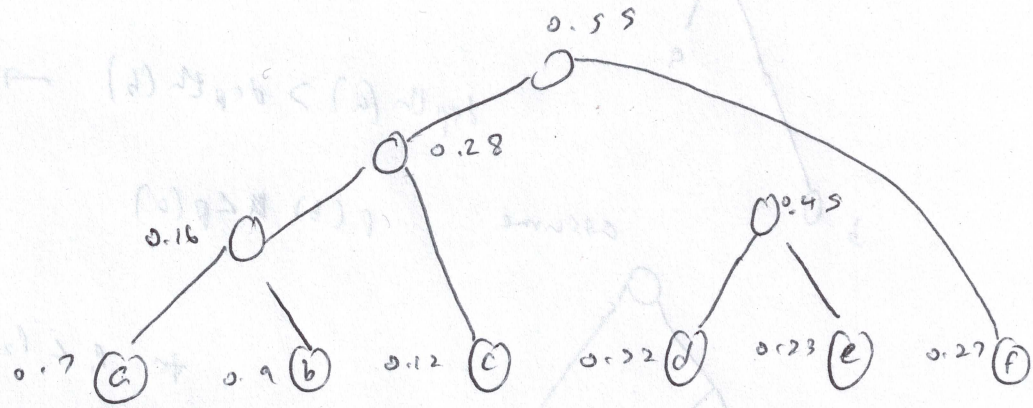
n is a proper ancestor of m

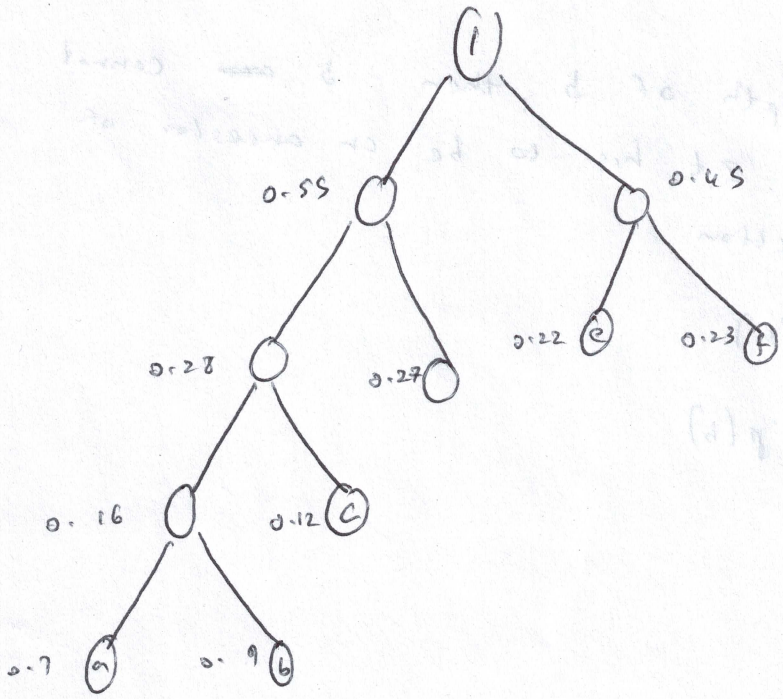
n is a proper descendant of m

3.20

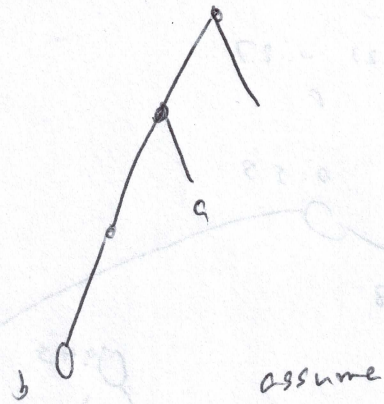
a 0.7
b 0.9
c 0.12
d 0.22
e 0.23
f 0.27

0.7 0.9 0.12 0.22 0.23 0.27
a b c d e f



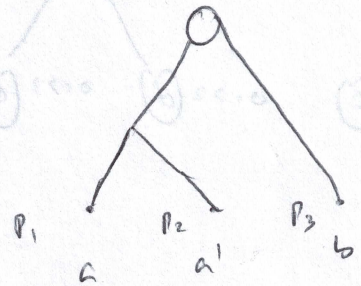


3.21



depth (a) > depth (b) → given

assume p(b) ≮ p(a)



$P_1 < P_2 < P_3$

if depth of a is > the depth of b, then b cannot be a child or sibling a. It has to be an ancestor of a there for by contradiction

p(b) < p(a)

must b p(a) ≯ p(b)