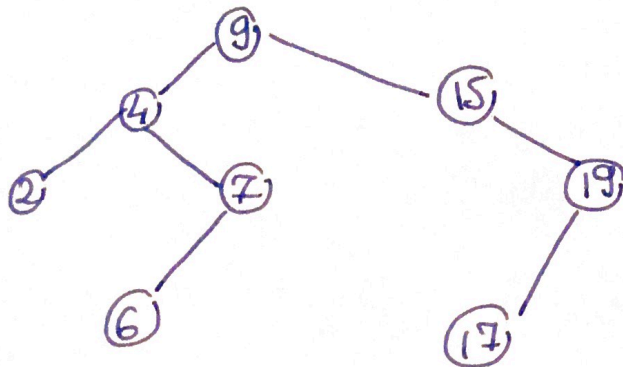


Probleme curs 3,4 SDA

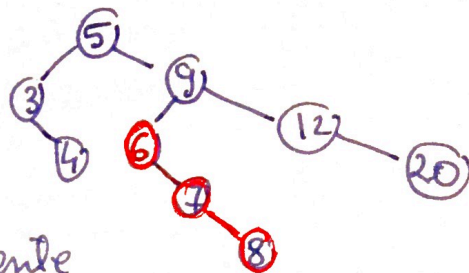
Pb 1



Percursare preordine: 9, 4, 2, 7, 6, 15, 19, 17

Pb 2

pentru recurența (e):



pentru fiecare nod din recurență
se verifică dacă elementele din dreapta acestuia reprezintă
toate nodurile aflate în subarborile a căror rădăcină este
nodul respectiv.

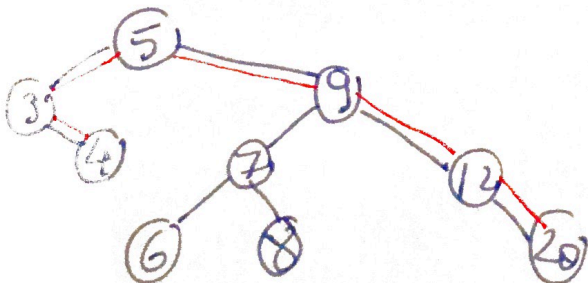
- Care sunt cheile din noduri frunză din arborele inițial?

R: 4, 6, 8, 20

- Care este val. diametrului arborelui?

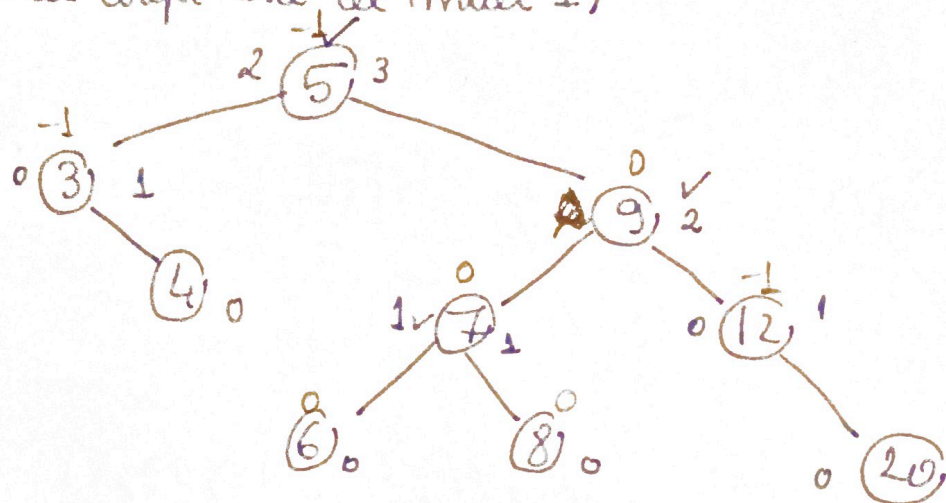
diametru = lungime maximă dintre 2 frunze.

R: 5



Este un arbore AVL?

↳ arbori echilibrați \Rightarrow fiecare nod al arborelui este echilibrat (diferența de înălțime dintre subarborii stâng și cel drept este cel mult 1)

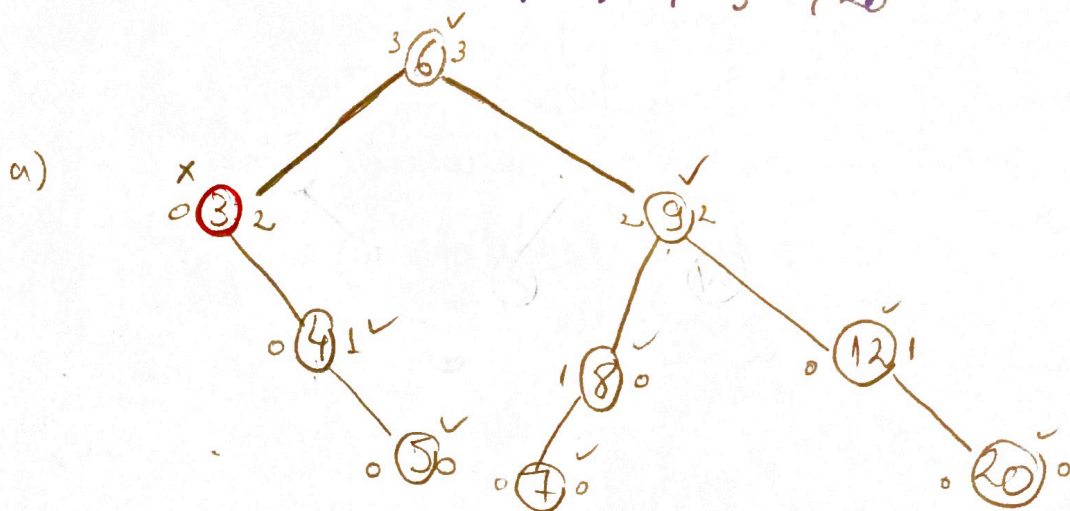


noduri echilibrate 4, 6, 8, 20; 7, 12, 9, 3, 5

\Rightarrow toate nodurile sunt echilibrate \Rightarrow arborele este AVL

pb 3

6, 3, 4, 9, 12, 5, 8, 7, 20



b) parcurgerea post ordine:

5, 4, 3, 7, 8, 20, 12, 9, 6

c) înălțimea arborelui = 3

d) este AVL? ; noduri echilibrate:

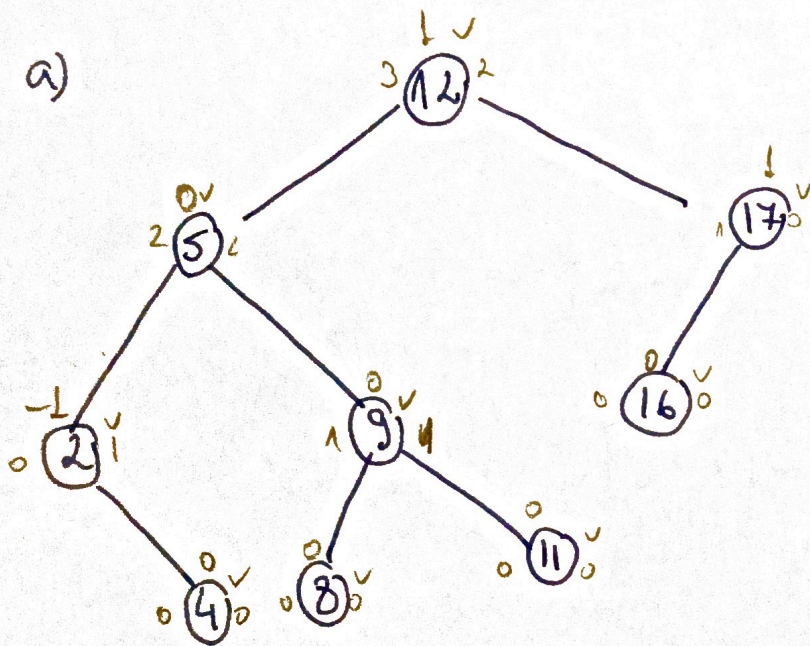
5, 7, 20; 4, 8, 12, 9, 6 \Rightarrow 3 nu este nod echilibrat

\Rightarrow nu toate nodurile sunt echilibrate \Rightarrow NU e AVL

pt. a deveni arbore AVL este suficient să adăugăm cheia 2 (sau orice număr < 3)

Pl 4

a)



b) post-ordine: 4, 2, 8, 11, 9, 5, 16, 17, 12
noduri interne: 2, 9, 5, 17, 12

c) arbore perfect echilibrat (AVL)?

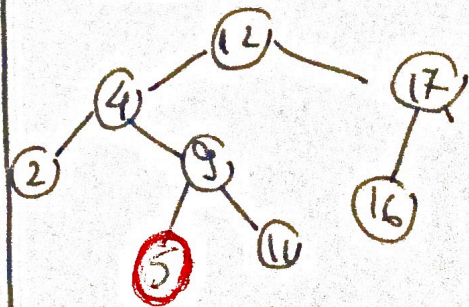
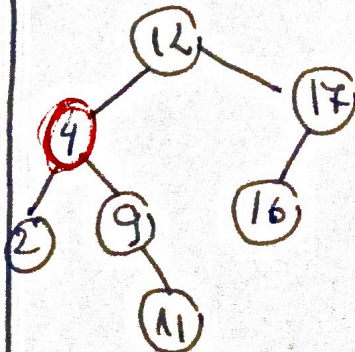
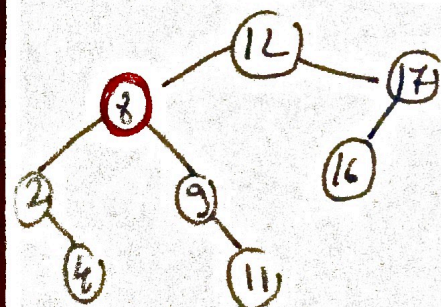
noduri echilibrate (nu lățimea din subarborele stg. - înălțimea din subarb. drept ≤ 1): 4, 8, 11, 16; 2, 9, 5, 17, 12 \Rightarrow

\Rightarrow toate nodurile sunt perfect echilibrate \Rightarrow este AVL

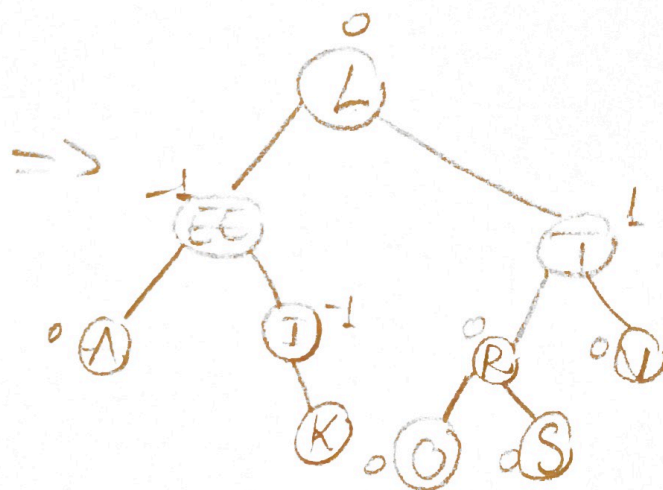
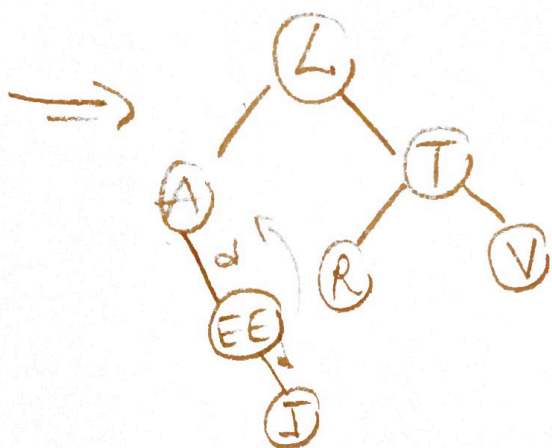
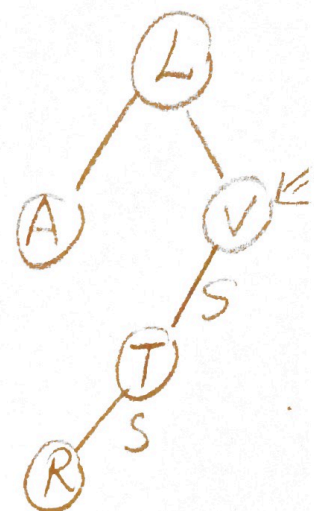
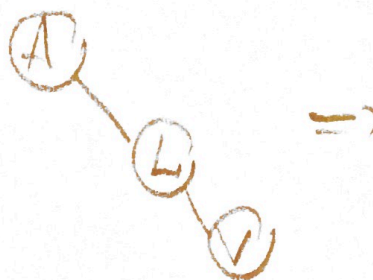
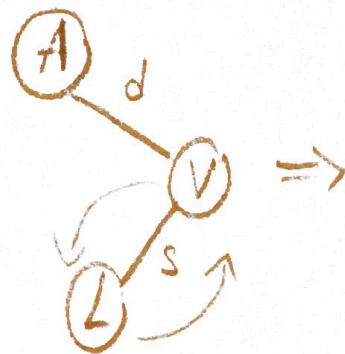
d) Tree-Delete(T, 5)

Tree-Delete(T, 8)

Tree-Insert(5)



pl. 7



părintele lui O este R