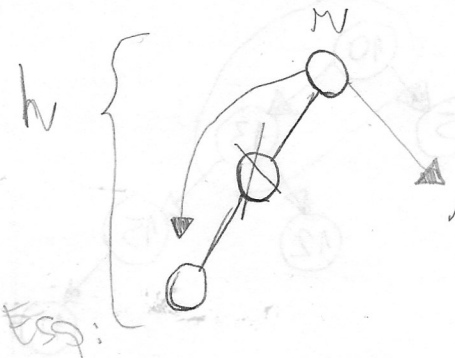
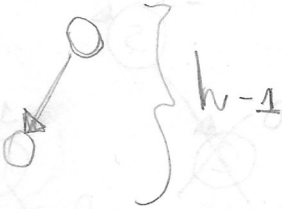
Remoção Árvore AVL

item 1.0)

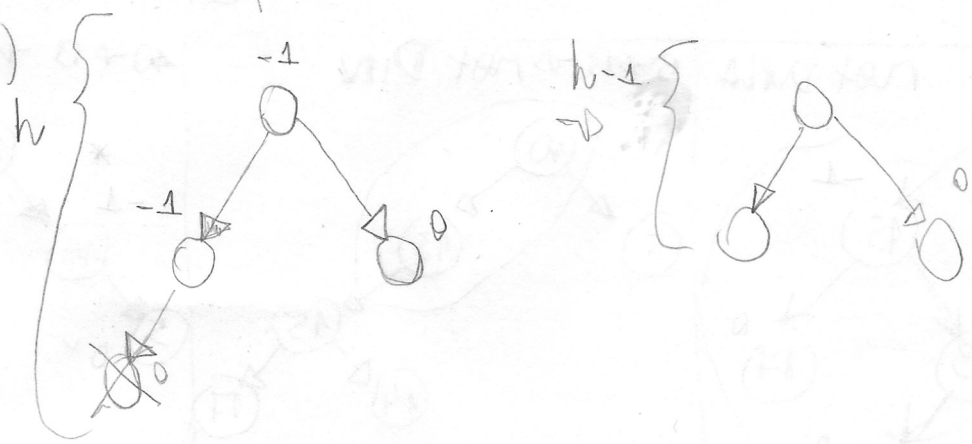


*diminuiu-altura = 1;

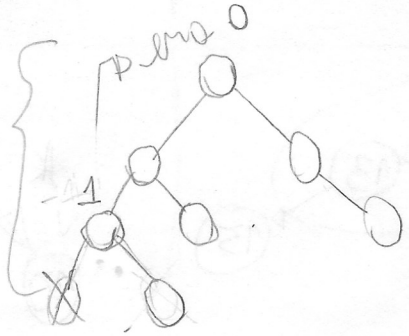


balanceamento ESQ:

item 1.1)



item 1.2)



↳ Altura não muda

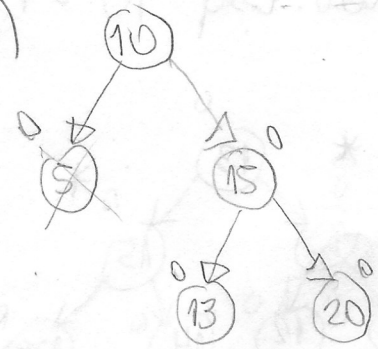
* diminuiu-altura = 0

item 1.3) Rotação simples ESQ

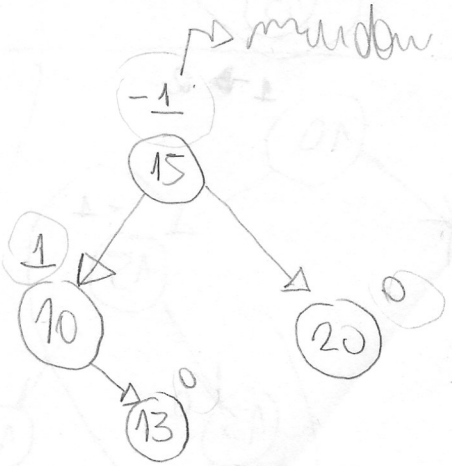
CASO 1 Remover o 5

1 → se tornou 2

a)

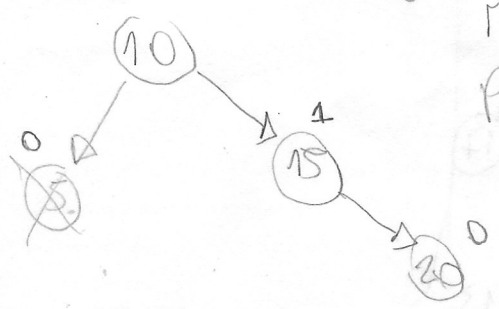


rotação simples p/ ESQUERDA

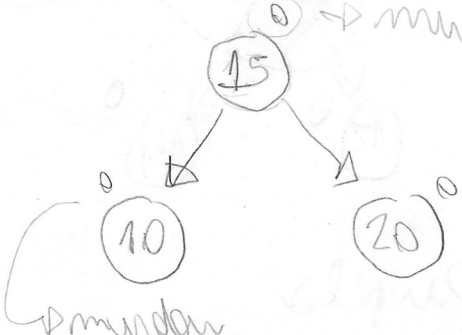


b)

1 → se tornou 2

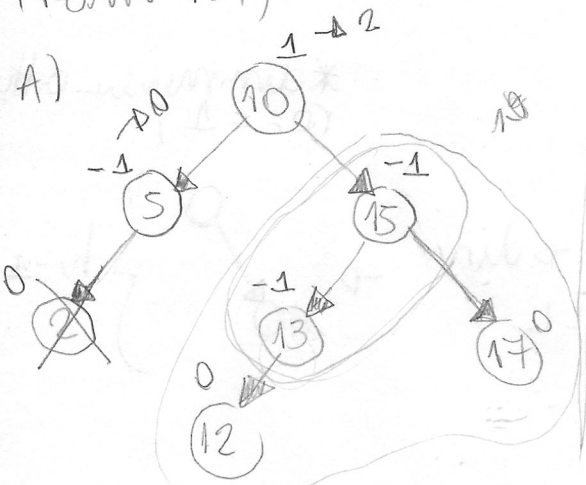


rotação simples p/ ESQUERDA

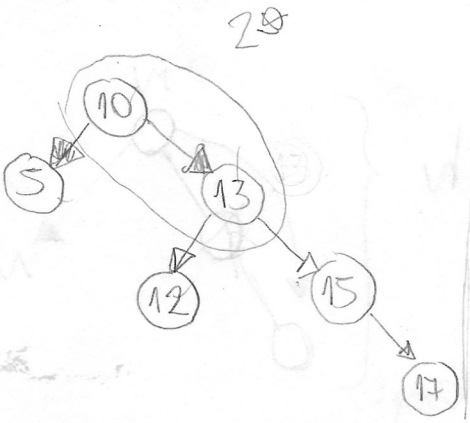


item 1.4) rot. DUPLA

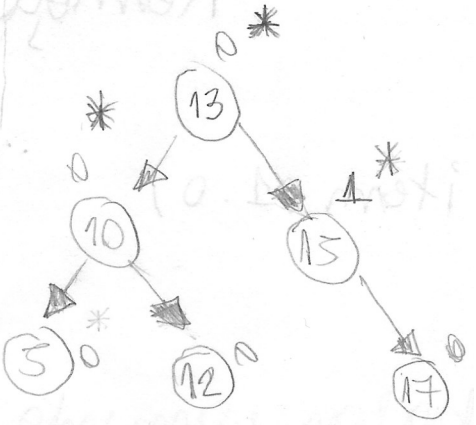
A)



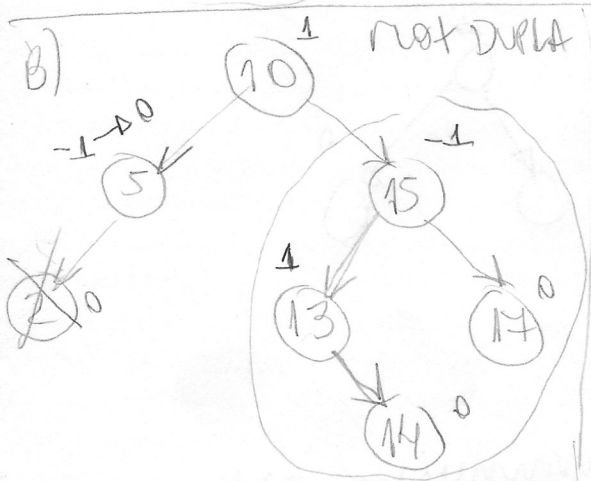
15 → 13 → rot. Dir



10 → 13 rot. Esq

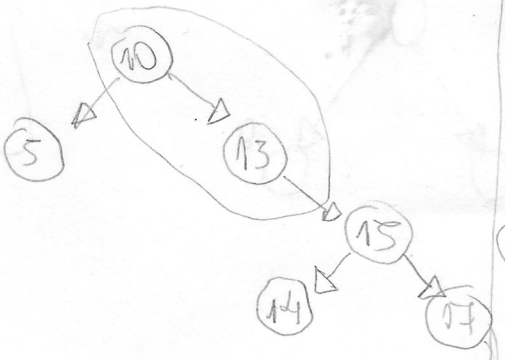


B)

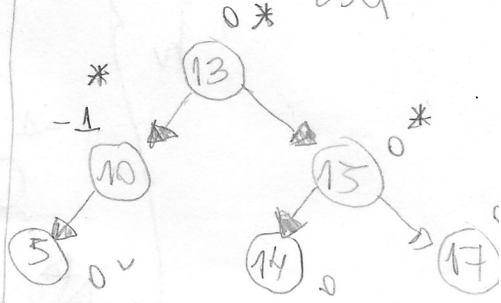


rot DUPLA

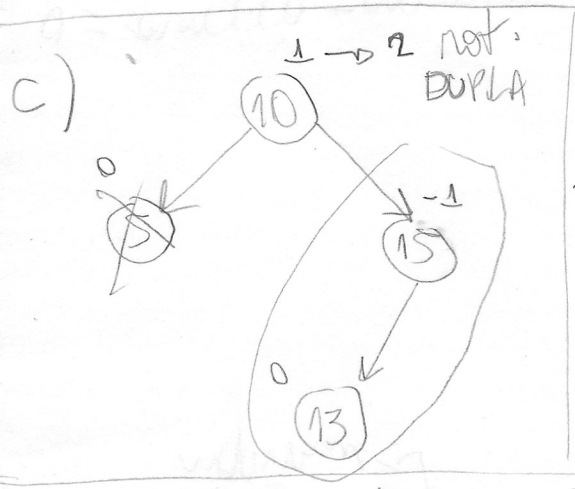
15 → 13 → rot. Dir



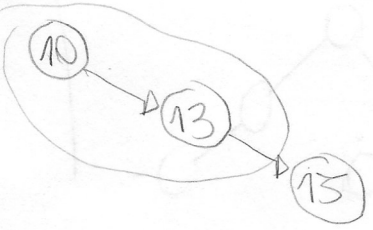
10 → 13 → rot. Esq



C)



rot. DUPLA

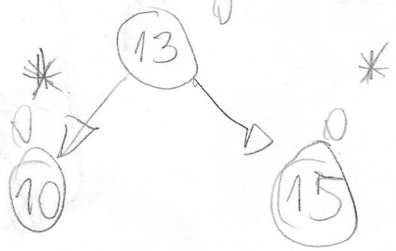


rot. Dir 15 → 13

=

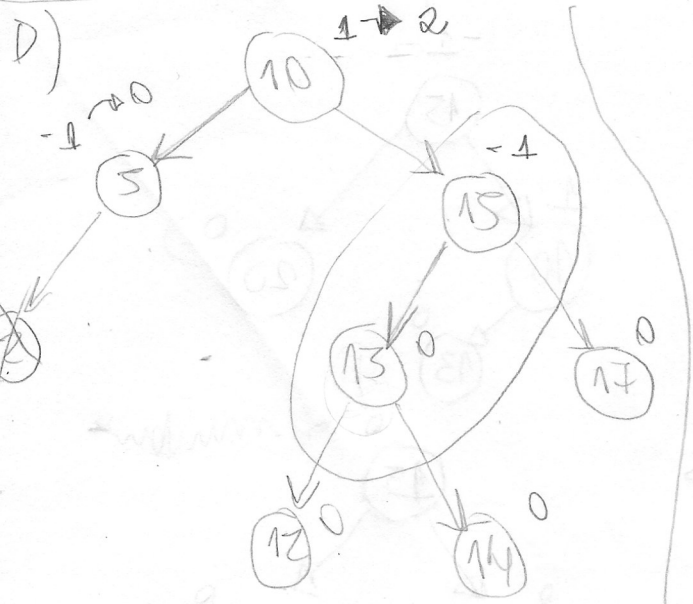
mesmo caso

=

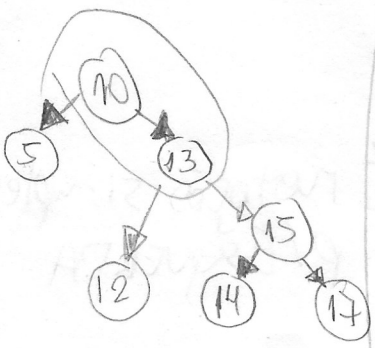


rot. Esq 10 → 13

D)

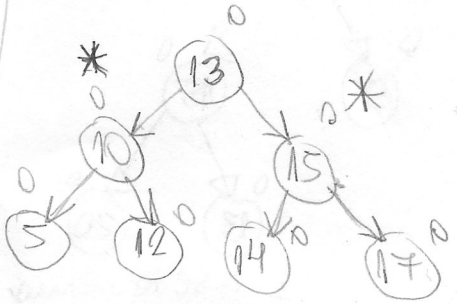


rot. Duplo



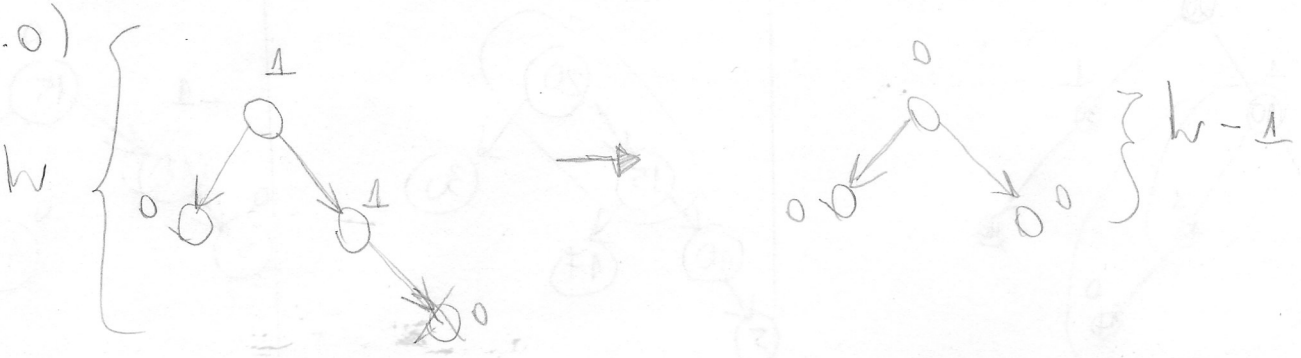
rot. Dir 15 → 13

rot. Esq 10 → 13

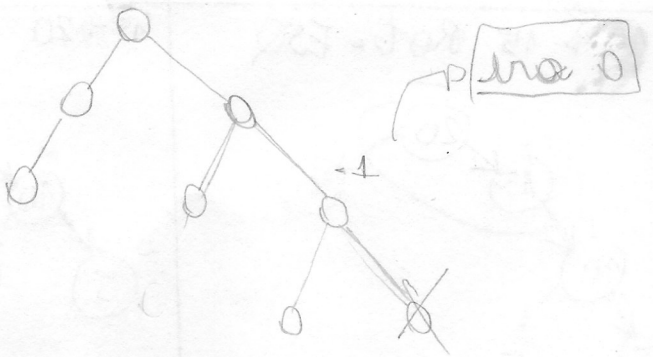


balanceamento div:

item 2.0)



item 2.1)

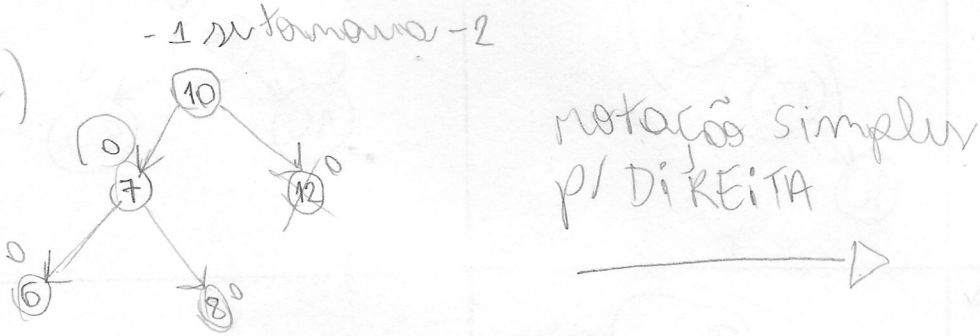


Altura nó muda
* diminuiu altura = 0

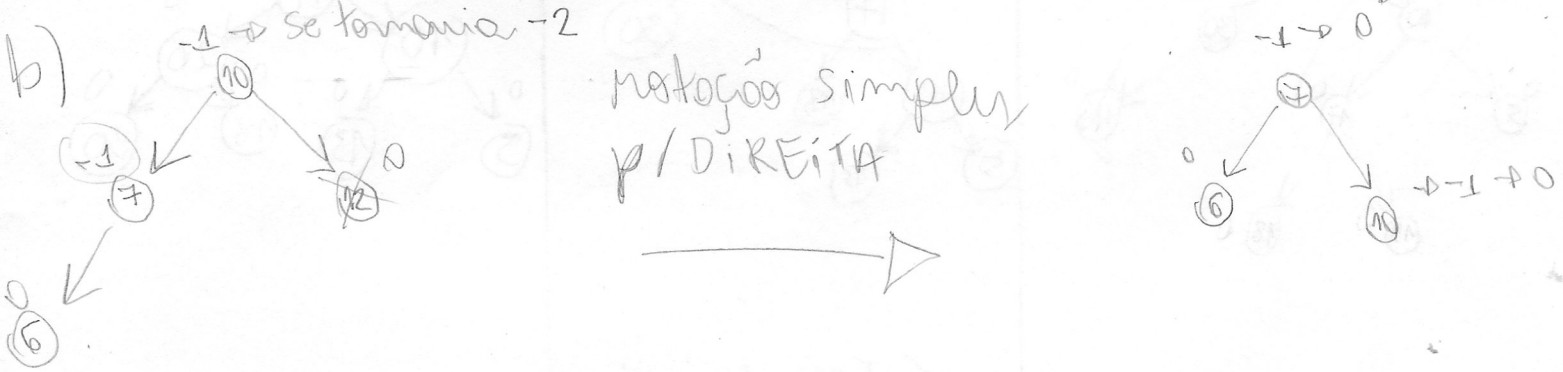
item 2.2) Rotação Simples DIR

CASOS | Remover 12

a)



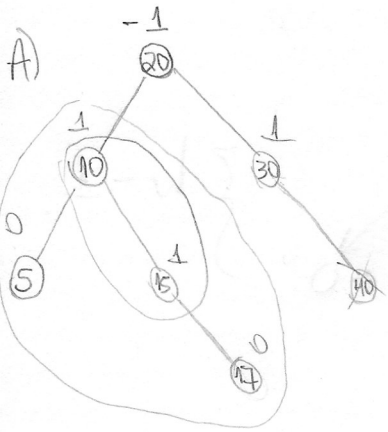
b)



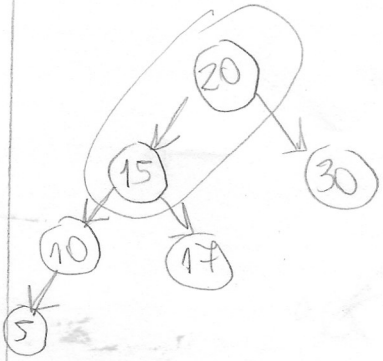
CASOS DE ROTAÇÃO DUPLA

Item 2.3 | Rot. Dupla

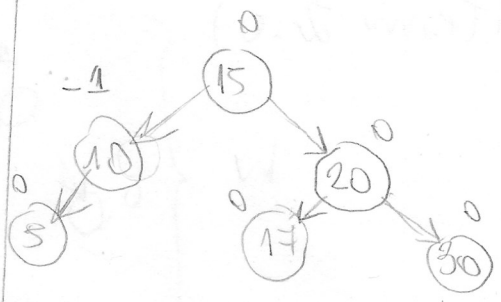
A)



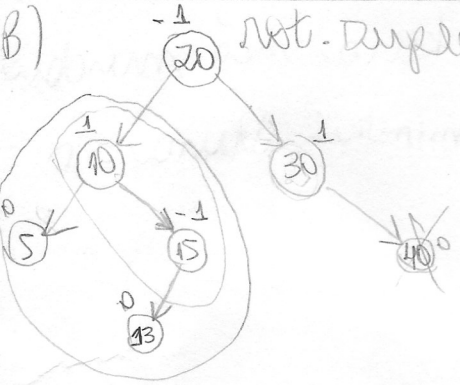
Rot. ESQ 10 → 15



Rot. DIR

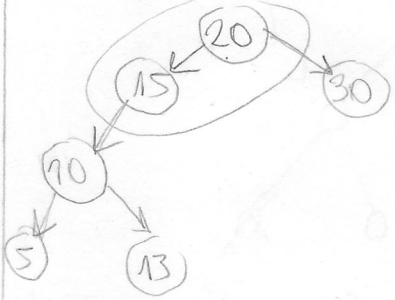


B)

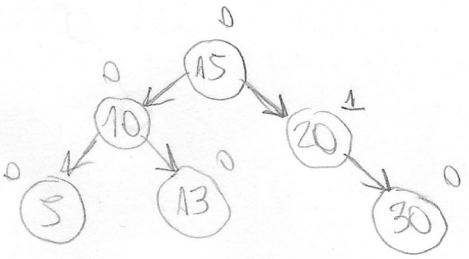


Rot. Dupla

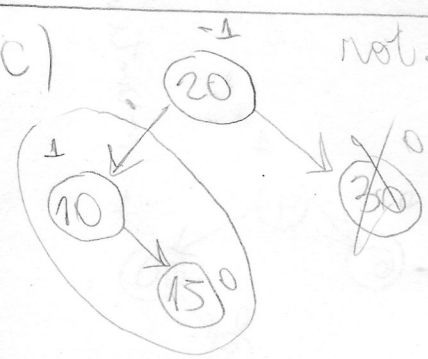
10 → 15 Rot. ESQ



15 → 20 Rot. DIR

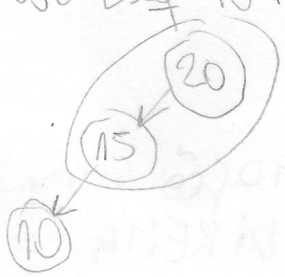


C)

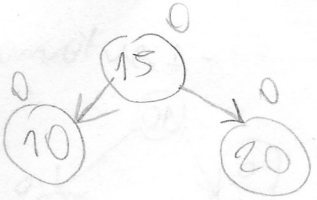


not. Dupla

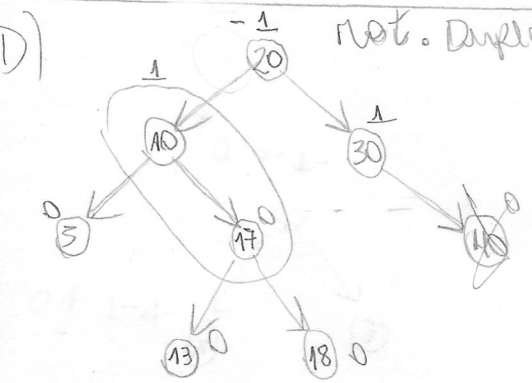
not. ESQ 10 → 15



not. DIR 15 → 20

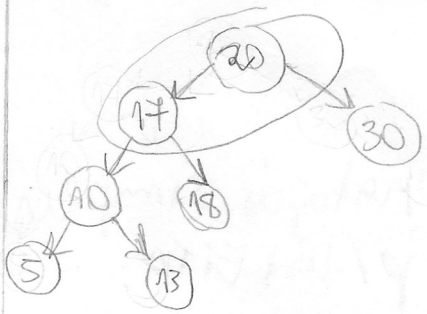


D)



not. Dupla

not. ESQ 10 → 17



Rot. DIR 17 → 20