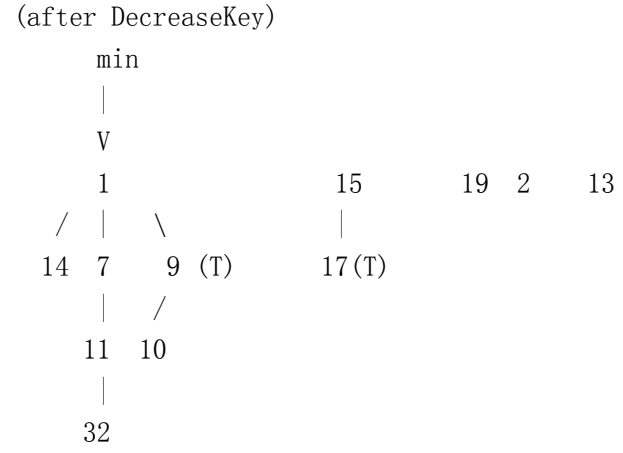
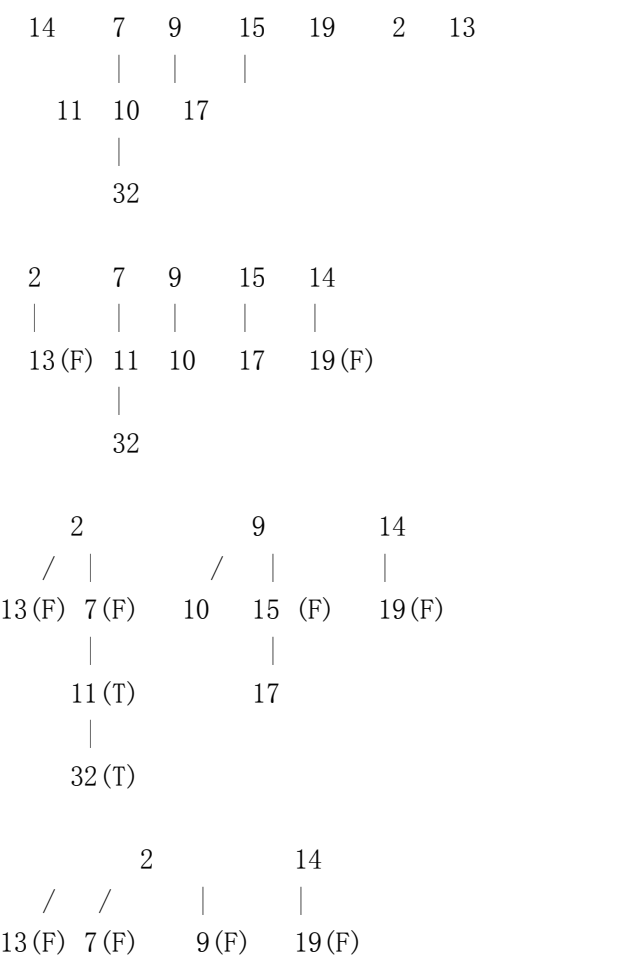
Exam02 solution.

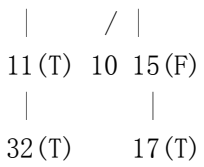
Spring 2003

1.
(part a)

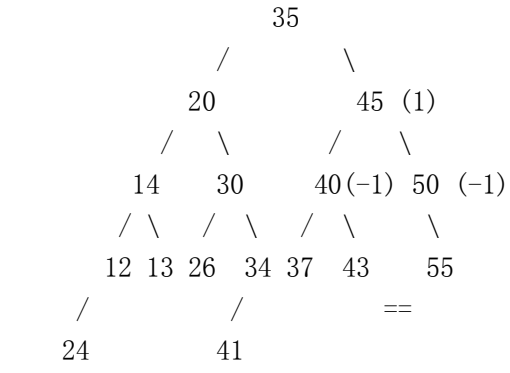


(part b)



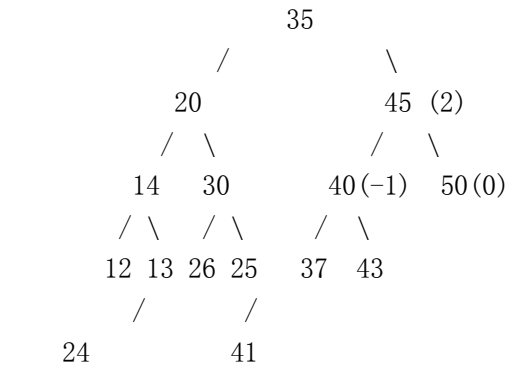


2)

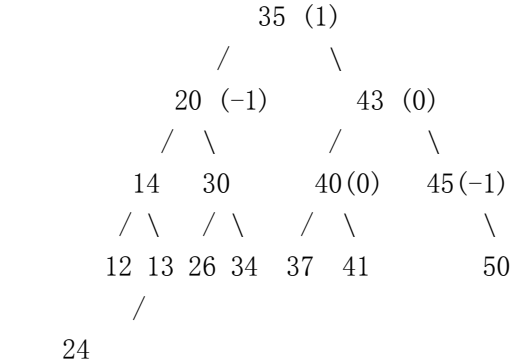


Part a:

delete 55.

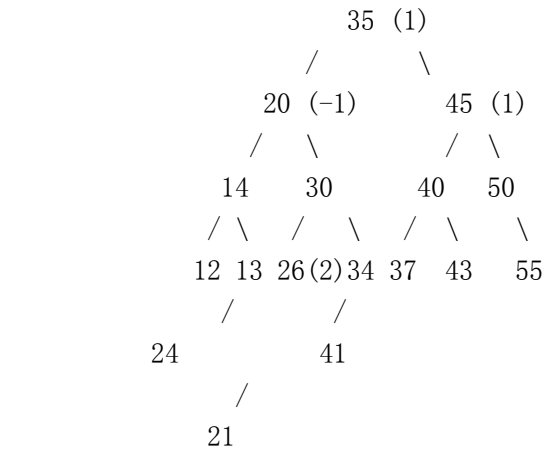


R-1 Rotation

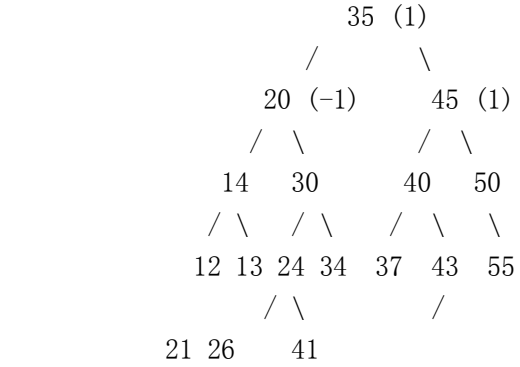


Part b:

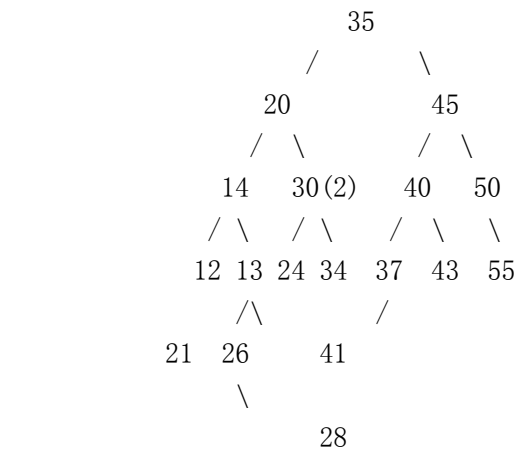
Insert 21



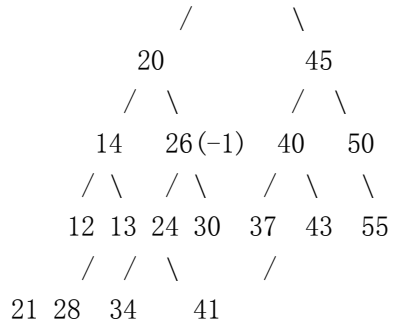
LL Rotation

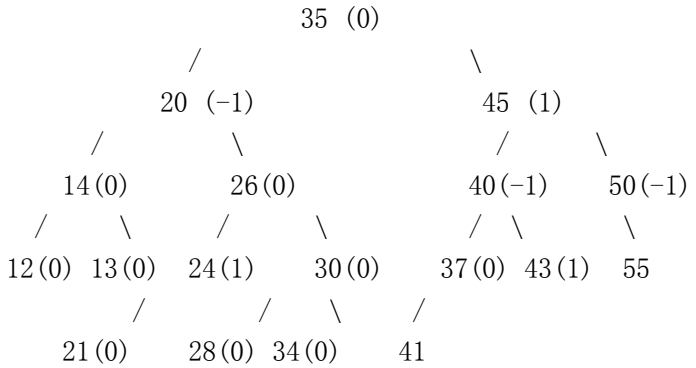


Insert 28



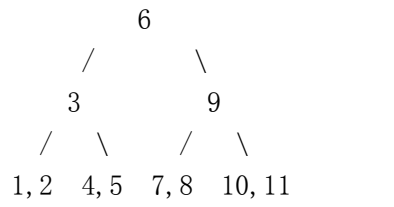
LR Rotation:

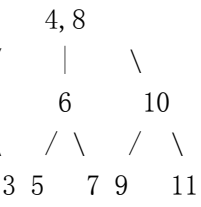




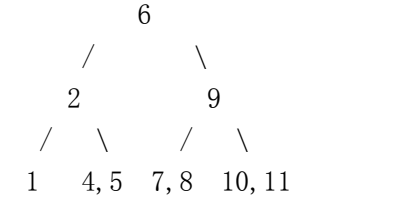
3. Two possibilities

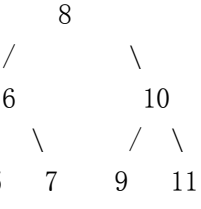
(a)



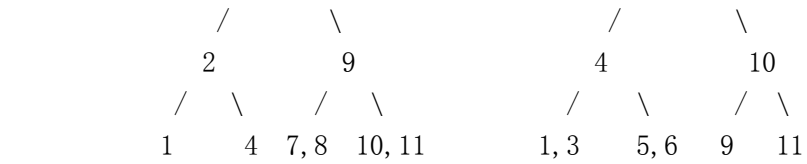


(b) after the first deletion

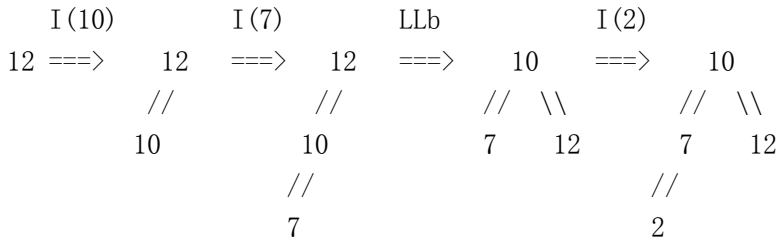


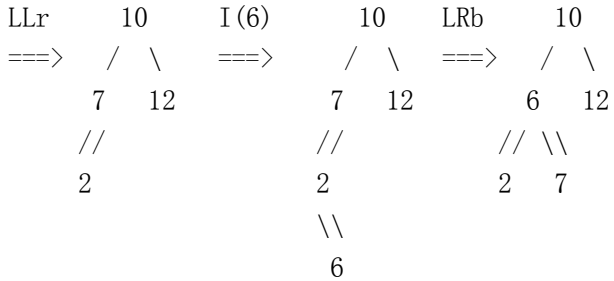


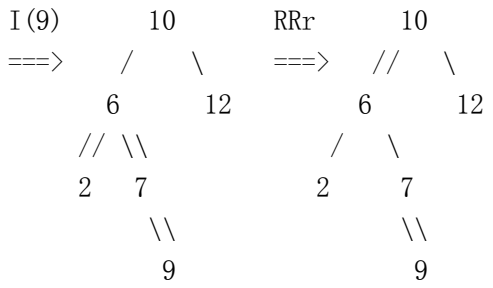
after the second deletion


2 9
1 4 7,8 10,11
4 10
1,3 5,6 9 11

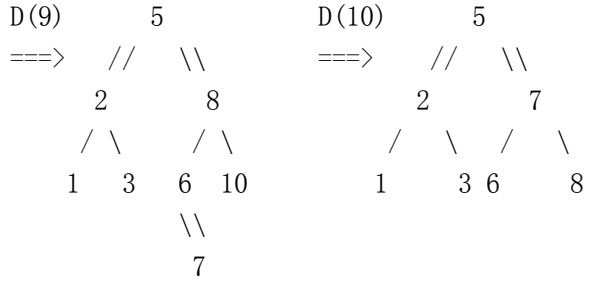
4. (a)


I(10)
12 ===> 12
10
I(7)
===> 12
10
7
LLb
===> 10
7 12
I(2)
===> 10
7 12
2


LLr
===> 10
7 12
2
I(6)
===> 10
7 12
2
6
LRb
===> 10
6 12
2 7


I(9)
===> 10
6 12
2 7
9
RRr
===> 10
6 12
2 7
9

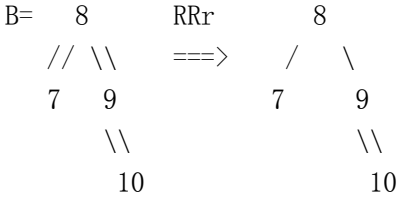
(b)


D(9)
===> 5
2 8
1 3 6 10
7
D(10)
===> 5
2 7
1 3 6 8

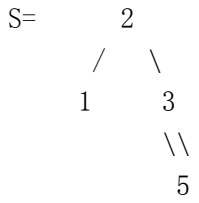
(c)

Step 1. S=null, B=(7)

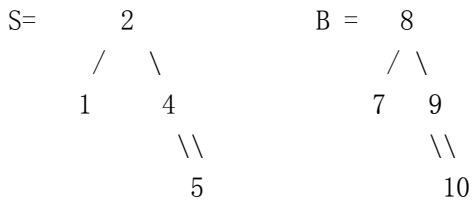
Step 2. S=null, B=join(B, 8, 9)



Step 3. S=join(2,5,S), B=same as that of step 2.



Final



The End.