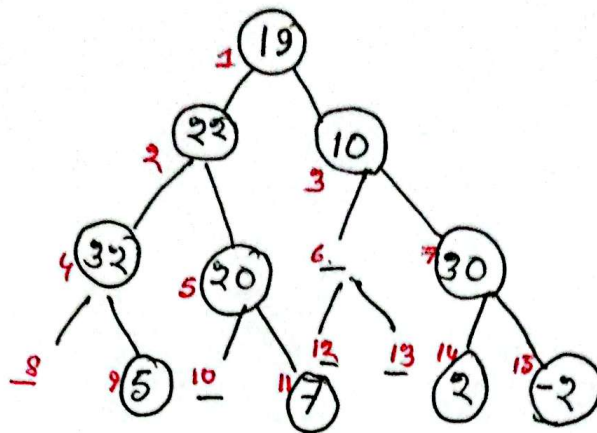


~~19, 22, 10, 32~~
 N, 19, 22, 10, 32, 20, N, 30, N, 5, N, 7, N, N, 2, -2
 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

a)



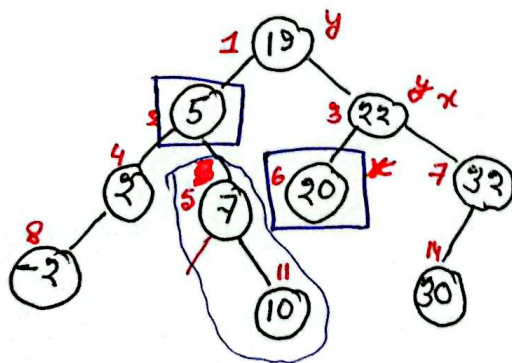
b) Pre-order: Root, left, right

19 22 32 | 5 | 20 7 | 10 | 30 2 -2

Post order: left, right, root

5 32 | 7 20 22 | 2 -2 30 10 19

c) BST creation using pre-order traversal:



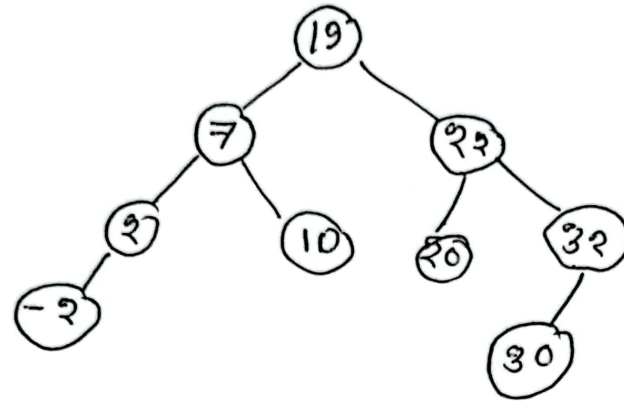
succ of 5: right sub tree exists. Right sub tree's left most node = 7
pred of 20: no left sub tree. Go up as long as x is left child.

step 1: x = 20, y = 22

step 2: x = 22, y = 19 [x now right child → loop break]

∴ pred of 20 is 19.

Remove 5 with its succ = 7



Remove 20 with its pred 19

Since 20 is a leaf node, it can be deleted directly without predecessor.

