

Q1 Infix to Postfix & prefix

$$\textcircled{1} (a+b)*c$$

→ Postfix : ab+c\*

→ Prefix : \*+abc

$$\textcircled{2} (A+(B\times C))$$

→ Postfix : ABC\*+

→ Prefix : +A\*BC

$$\textcircled{3} (x+y+z)* (A+B-C)$$

→ Postfix : XY+Z+AB+C-\*

→ Prefix : \*++XYZ-ABC

$$\textcircled{4} ((A/B)-C)+(D\times E)$$

→ Postfix : AB/C-D-E\*+

→ Prefix : +-/ABC\*DE

$$\textcircled{5} (A+B+C/D)* (E-F\times G)$$

→ Postfix : AB+CD/EF-G\*-\*

→ Prefix : \*++AB/CD-E\*FG

$$\textcircled{6} \quad (A/B/C) + (D * E - F)$$

→ Postfix : AB/C/DE \* + F -

→ Prefix : - + / / ABC \* DEF

$$\textcircled{7} \quad (X * Y * Z * W) - (A + B * C - D)$$

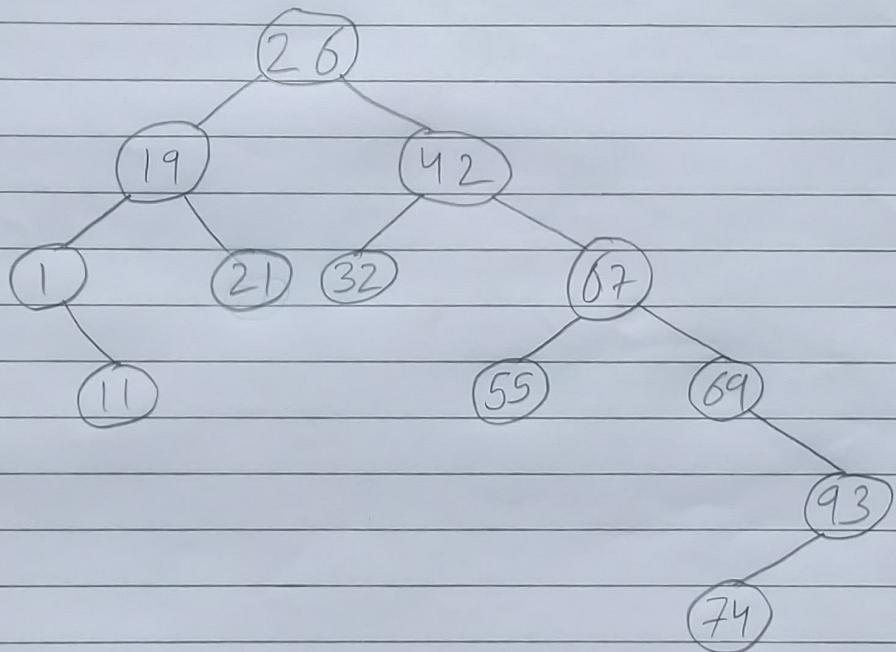
→ Postfix : XY2W \*\*\* ABC \* + d - -

→ Prefix : - \*\*\* XY2W - + A \* BC

Q2

Create binary search tree.

- ① 26, 19, 42, 67, 21, 1, 69, 55, 93, 74, 32, 11

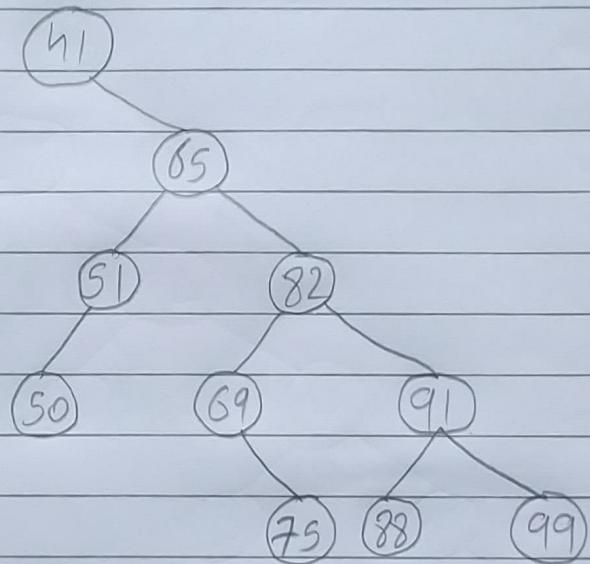


→ Inorder: - 1, 11, 19, 21, 26, 32, 42, 55, 67,  
69, 74, 93

→ Preorder: - 26, 19, 1, 11, 21, 42, 32, 67, 55, 69,  
93, 74

→ Postorder: - 11, 1, 21, 19, 32, 55, 74, 93, 69, 67,  
42, 26.

Q) 41, 65, 82, 91, 51, 50, 69, 75, 88, 99

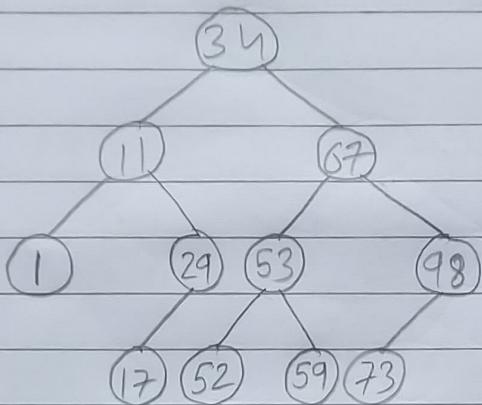


Inorder :- 41, 50, 51, 65, 69, 75, 82, 88, 91, 99

Preorder :- 41, 65, 51, 50, 82, 69, 75, 91, 88, 99

Postorder :- 50, 51, 75, 69, 88, 99, 91, 82, 65, 41

③ 34, 11, 67, 98, 1, 73, 53, 29, 52, 17, 59

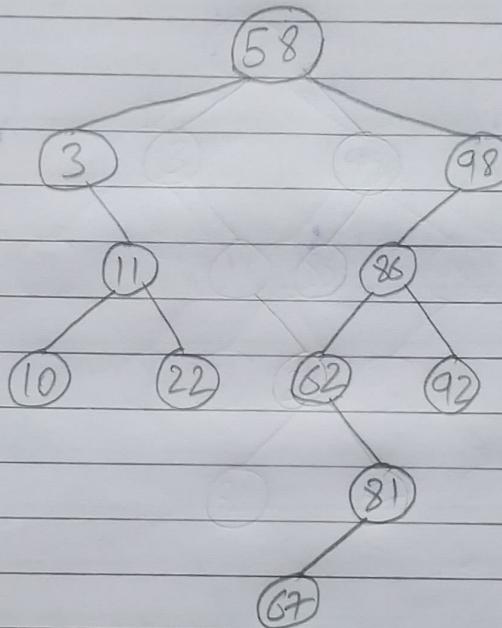


In order :- 1, 11, 17, 29, 34, 52, 53, 59, 67, 73, 98

Preorder :- 34, 11, 1, 29, 17, 67, 53, 52, 59, 98, 73

Postorder :- 1, 17, 29, 11, 52, 59, 53, 73, 98, 67, 34

⑦ 58, 3, 98, 11, 86, 22, 62, 67, 81, 92, 10



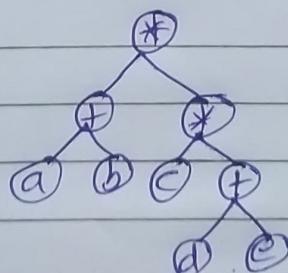
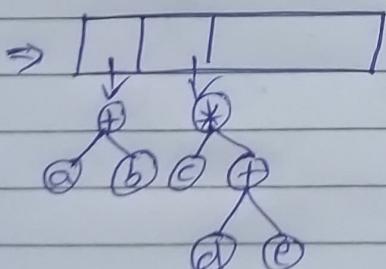
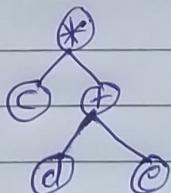
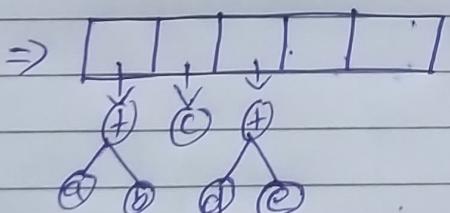
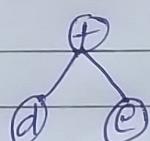
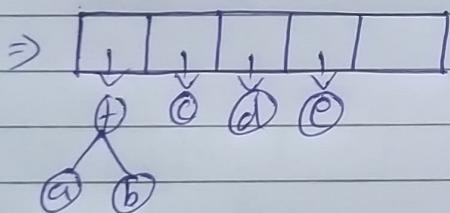
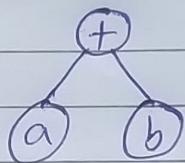
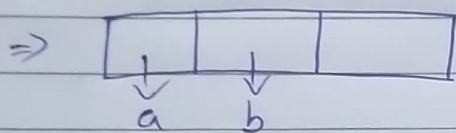
In order :- 3, 10, 11, 22, 58, 62, 67, 81, 86, 92, 98

Pre order :- 58, 3, 11, 10, 22, 98, 86, 62, 81, 67, 92

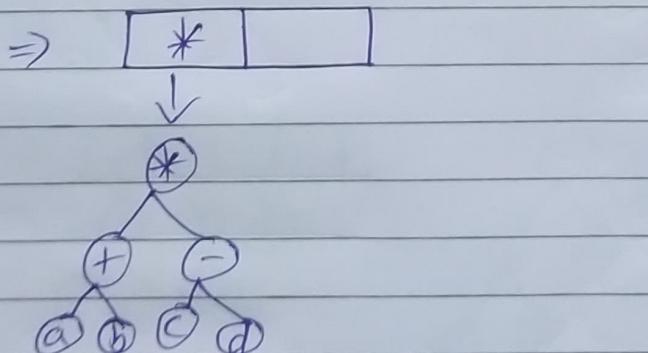
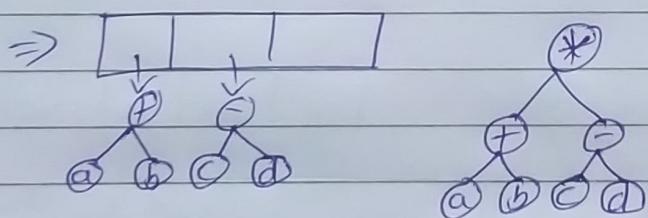
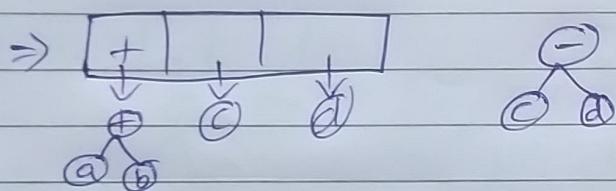
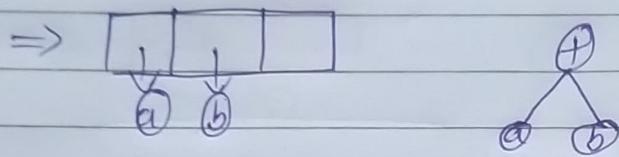
Post order :- 10, 22, 11, 3, 67, 81, 62, 92, 86, 98, 58

Q3 Create Expression Tree

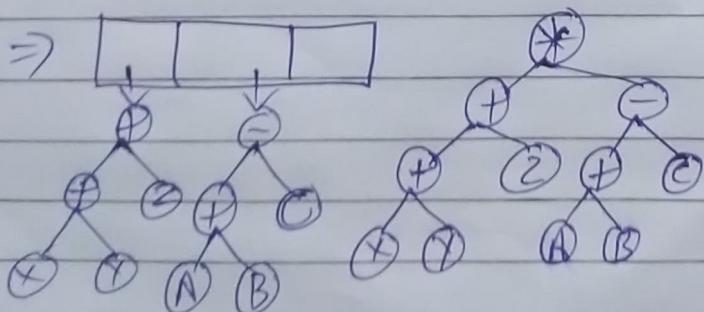
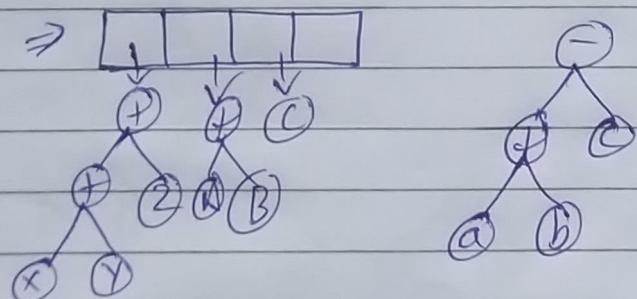
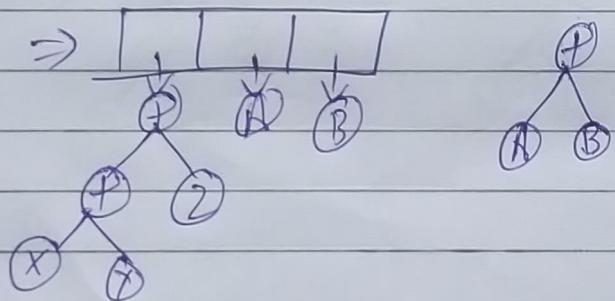
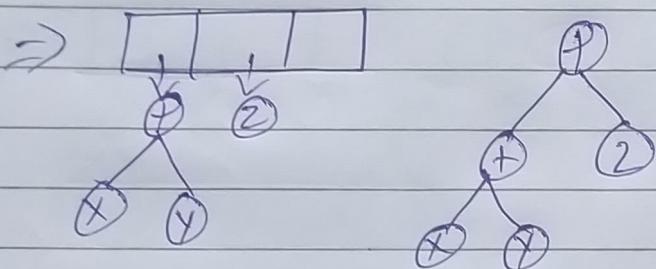
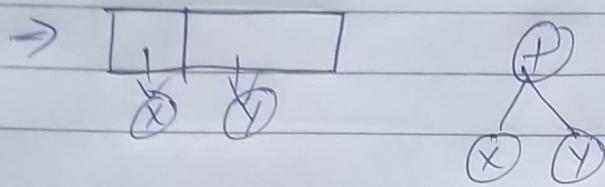
①  $ab + cde + **$



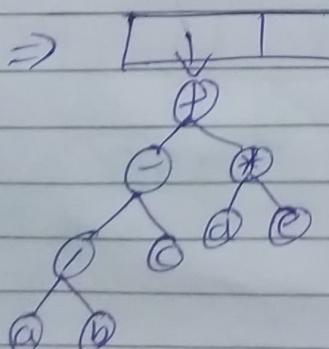
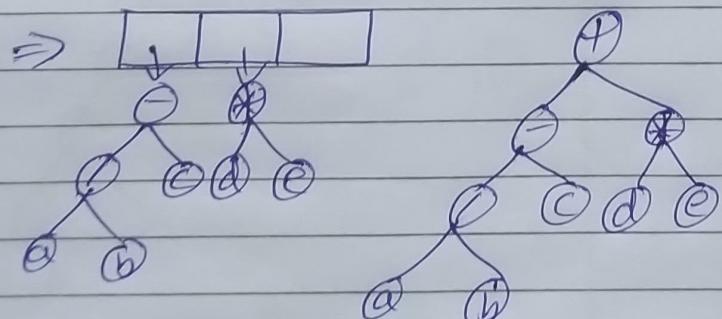
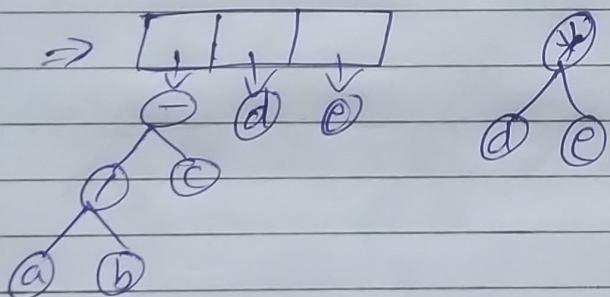
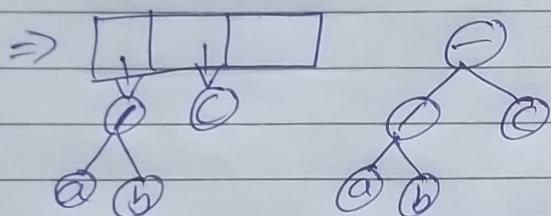
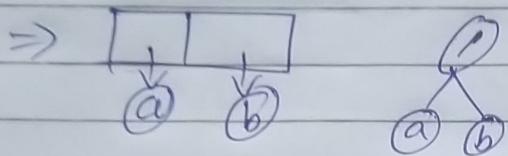
$$\textcircled{2} \quad (a+b) * (c-d) \Rightarrow ab + cd - *$$



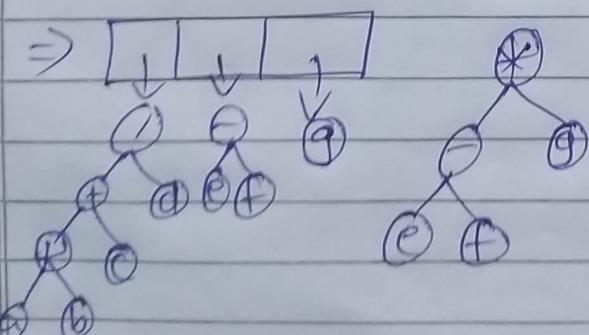
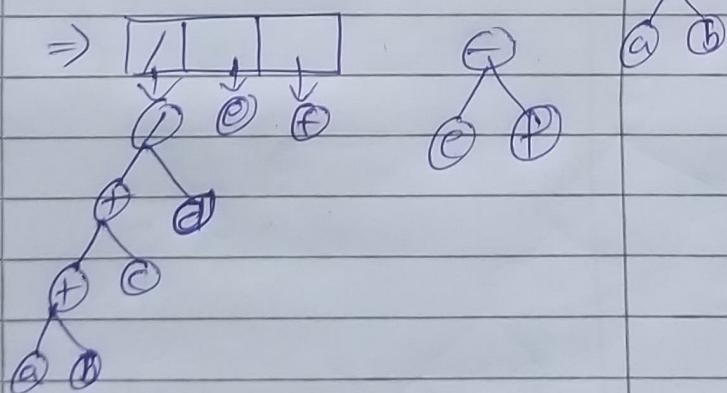
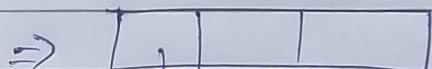
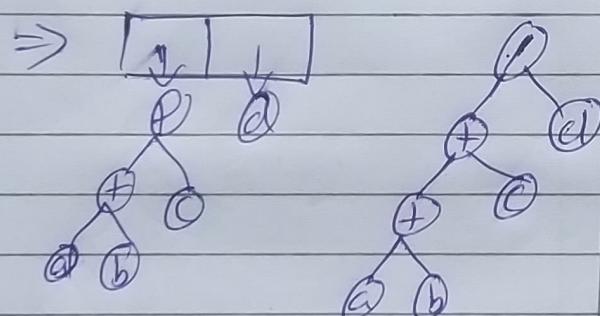
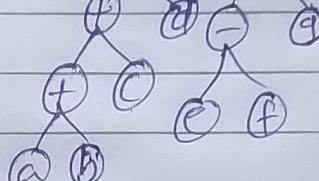
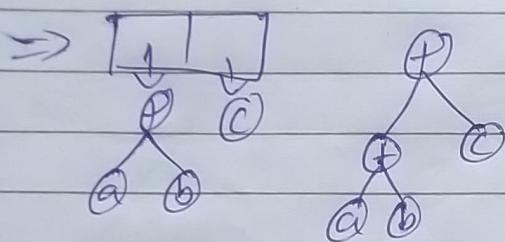
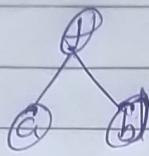
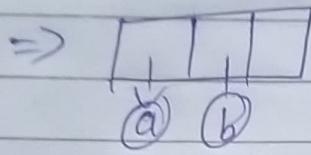
$$\textcircled{3} \quad X \times Y + 2 + AB + C - *$$



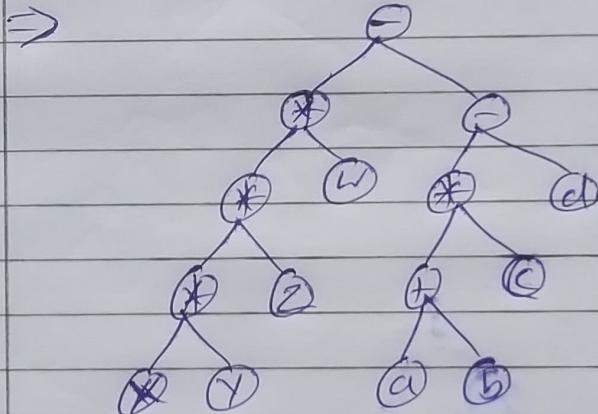
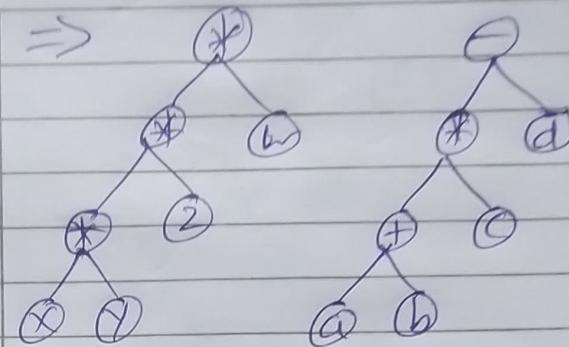
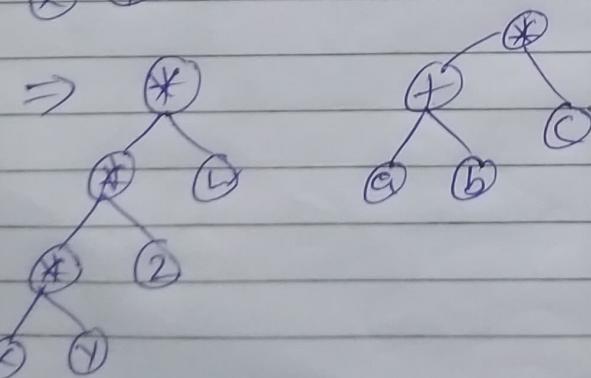
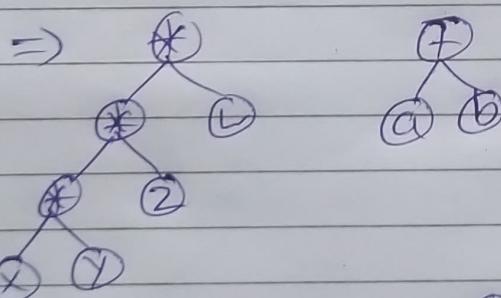
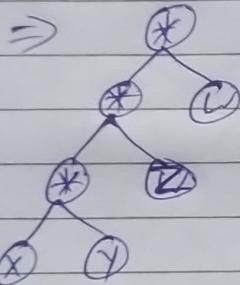
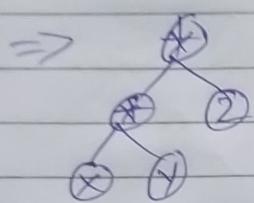
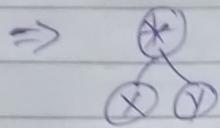
(4)  $ab/c - de * +$



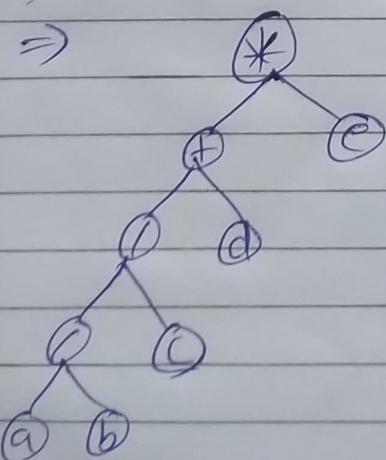
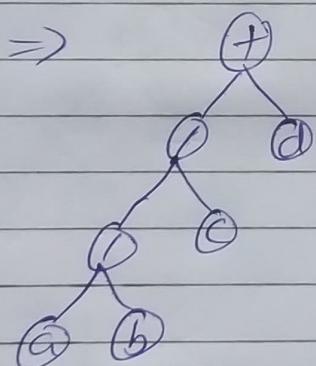
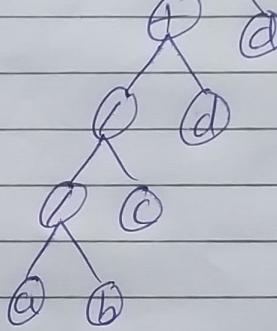
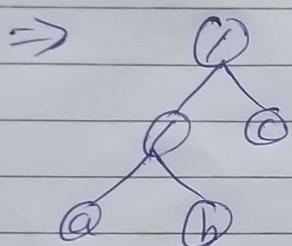
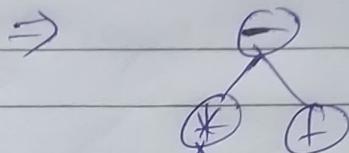
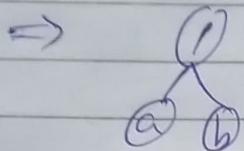
⑤  $ab + c + d / ef - g * *$



⑥  $xy * 2 * w * ab + c * d - -$

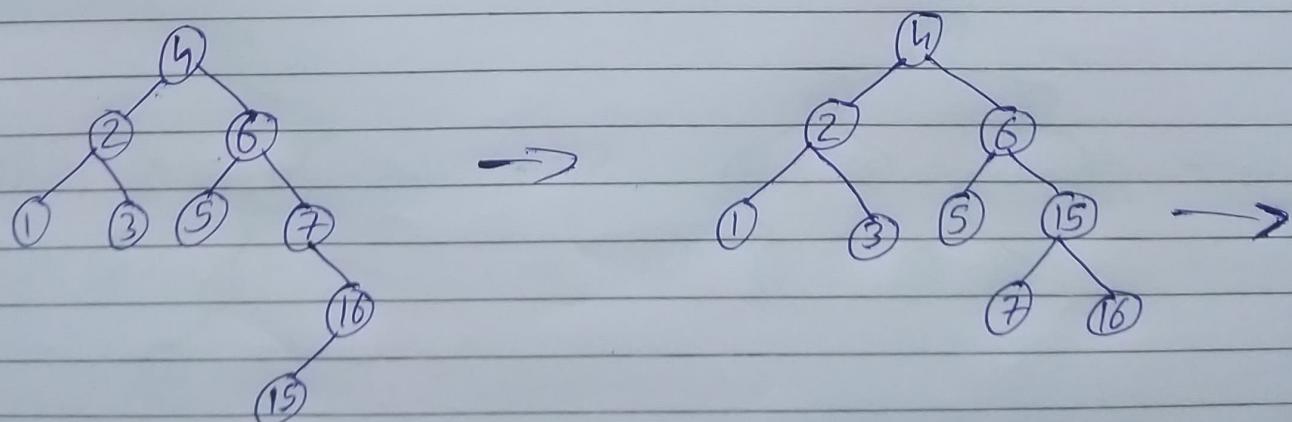
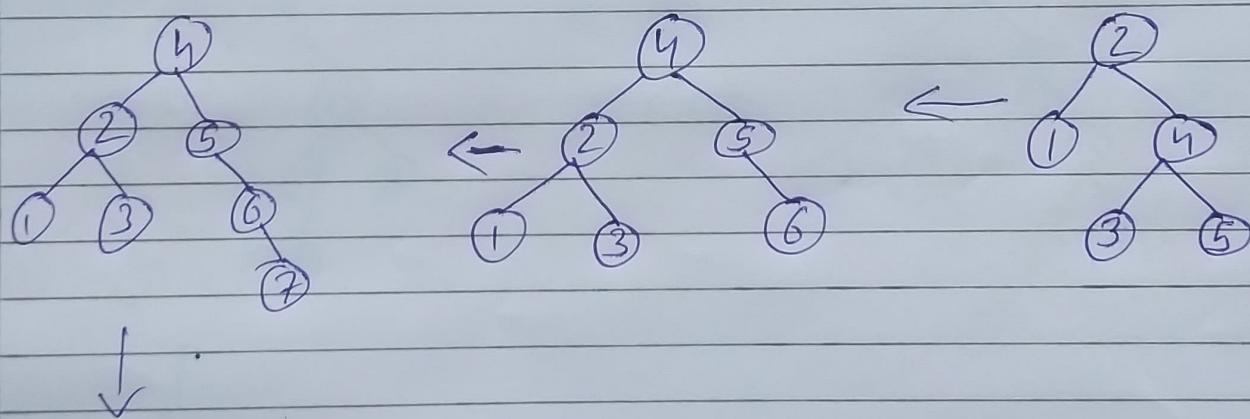
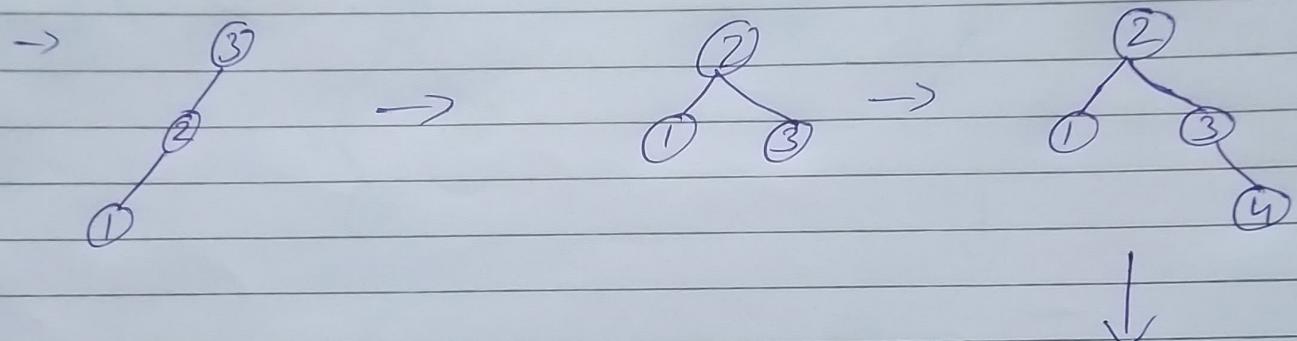


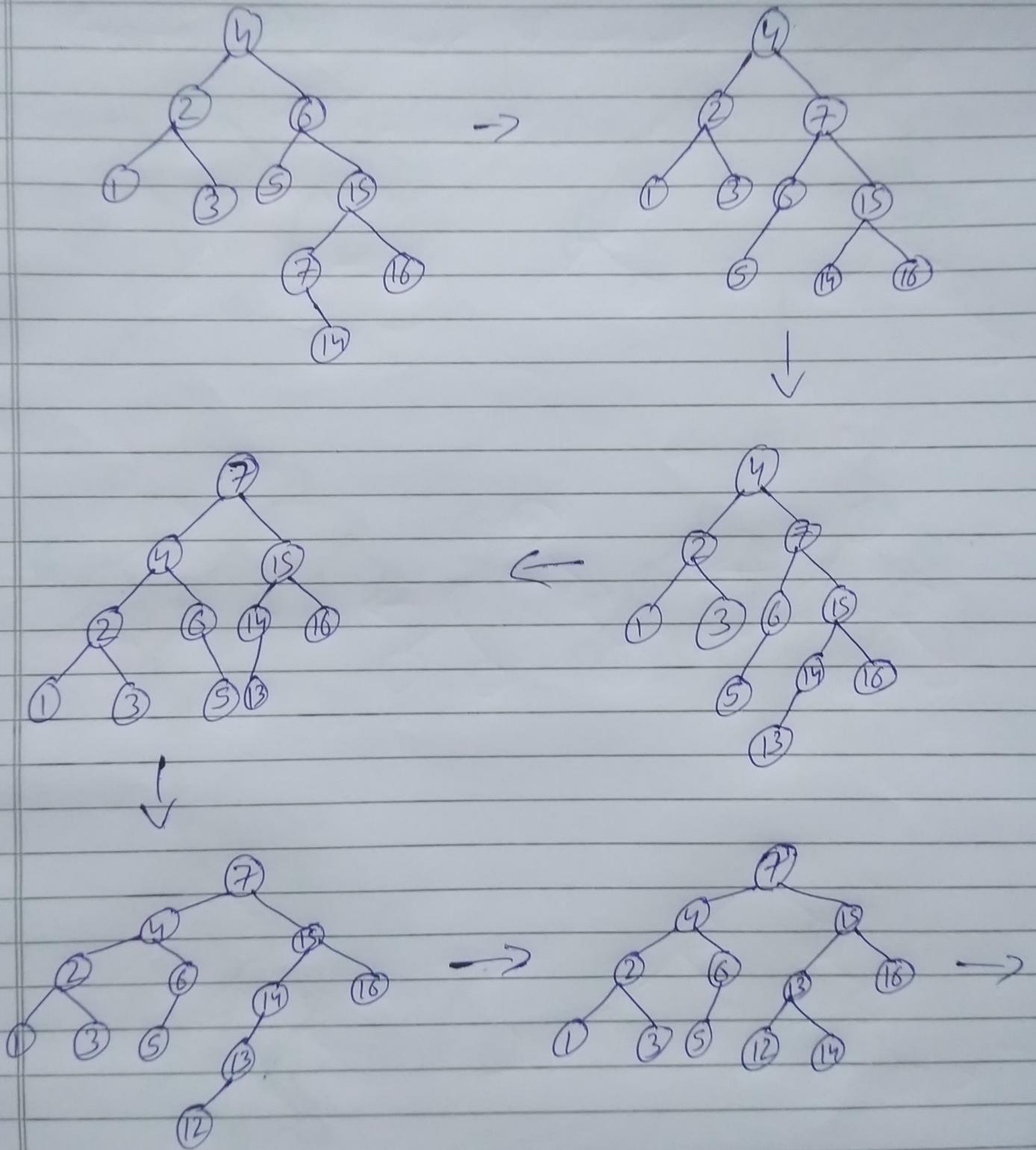
⑦  $ab/c/d + e*f -$

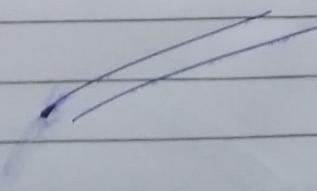
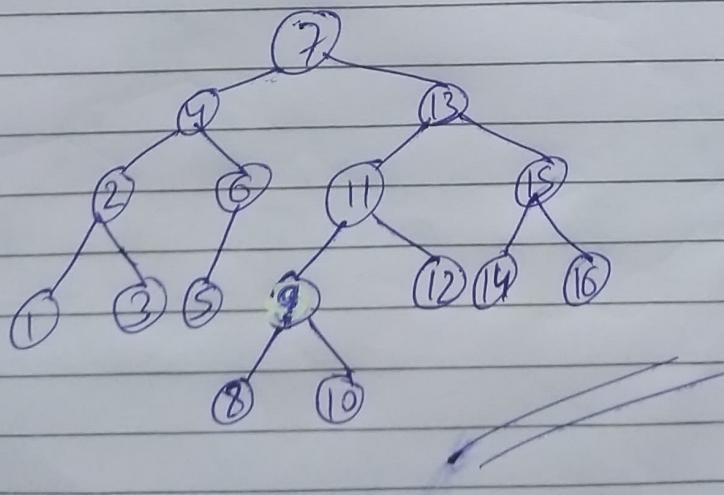
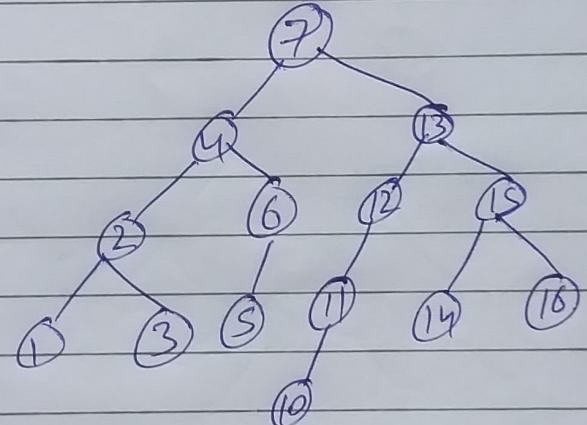
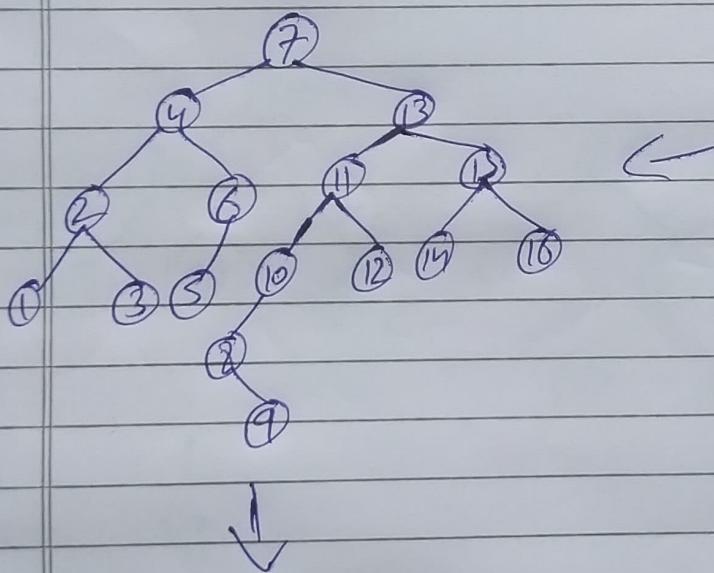
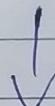
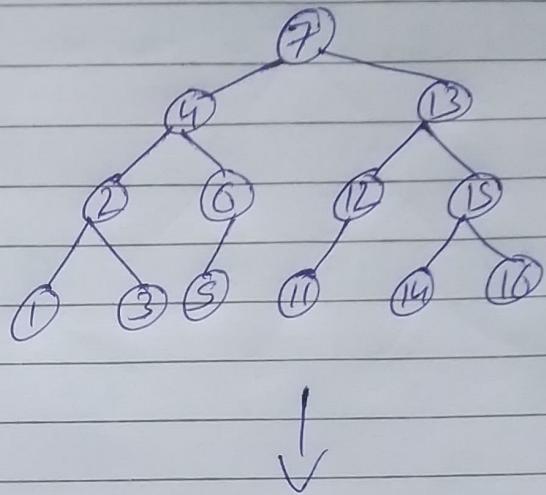
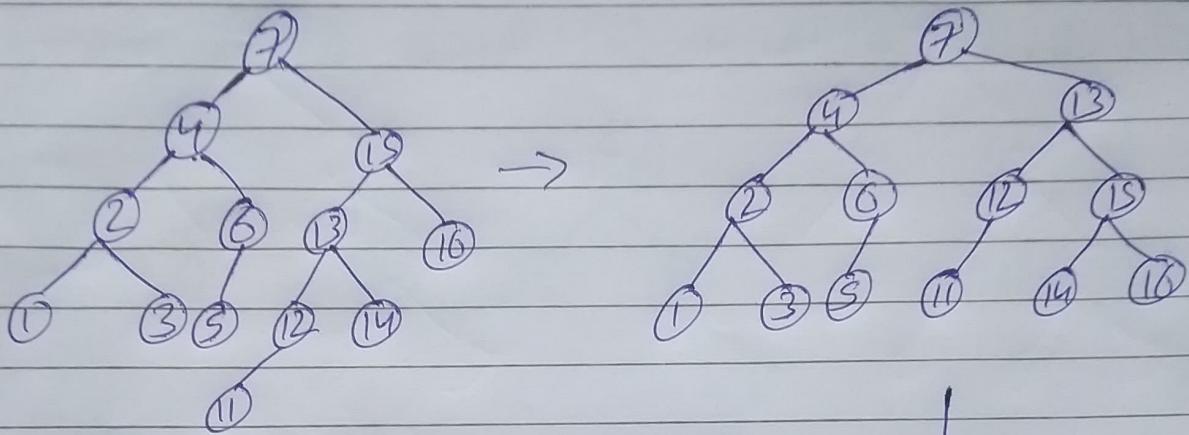


Q4 Create AVL tree from the following data

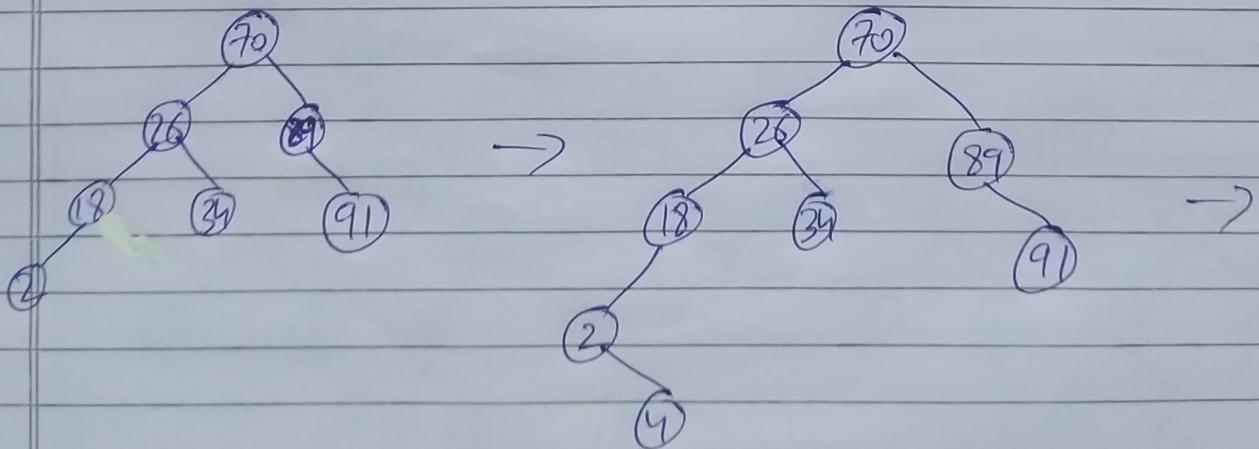
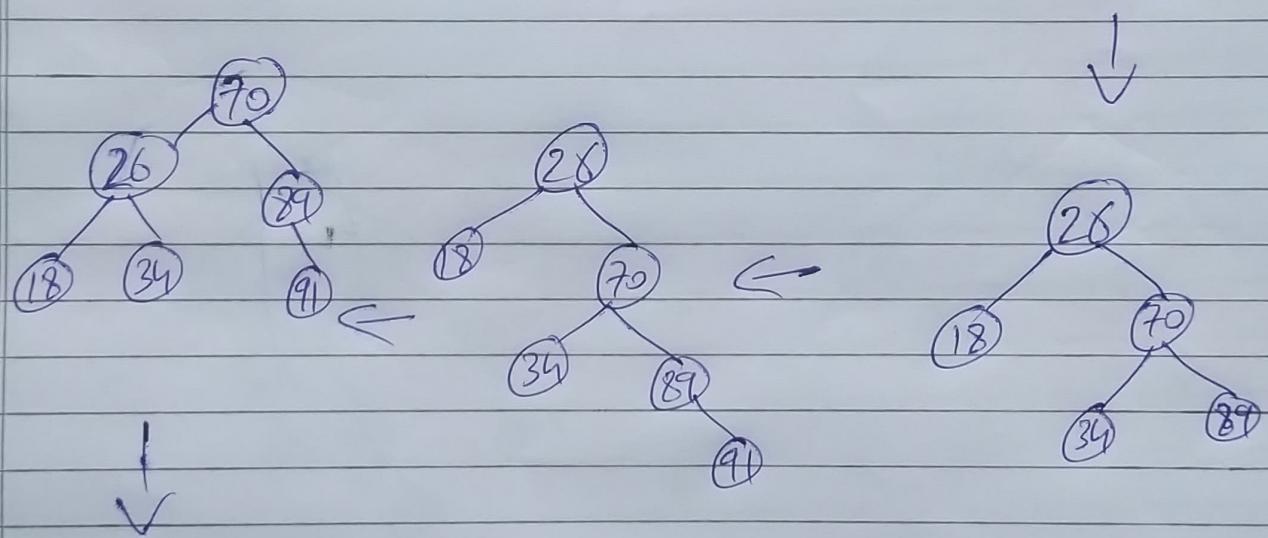
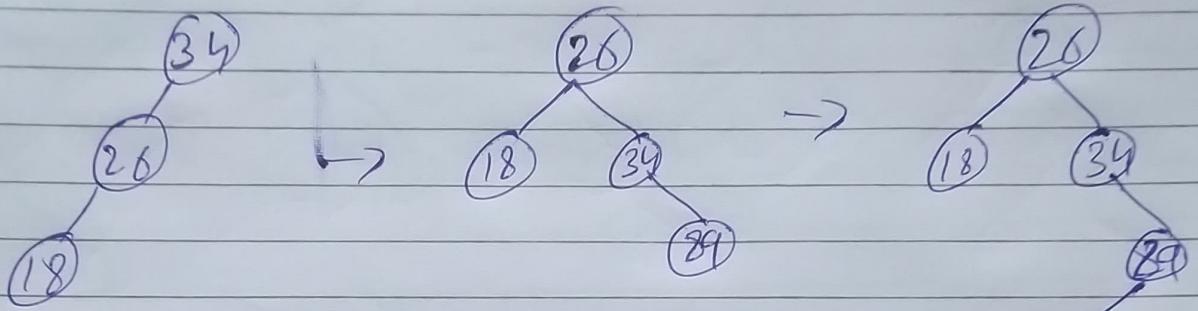
- ① 3, 2, 1, 4, 5, 6, 7, 16, 15, 14, 13, 12, 11, 10, 8, 9

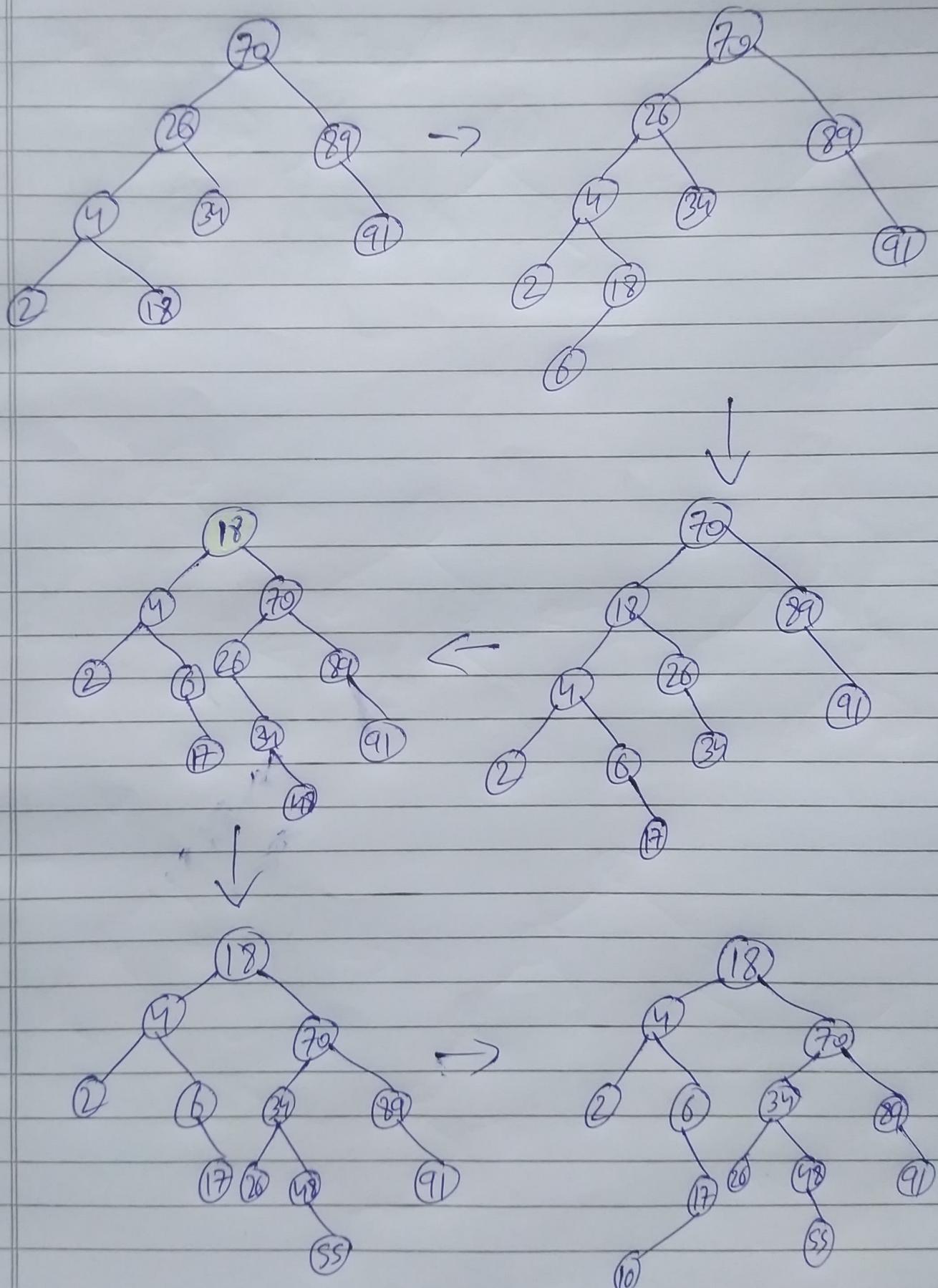


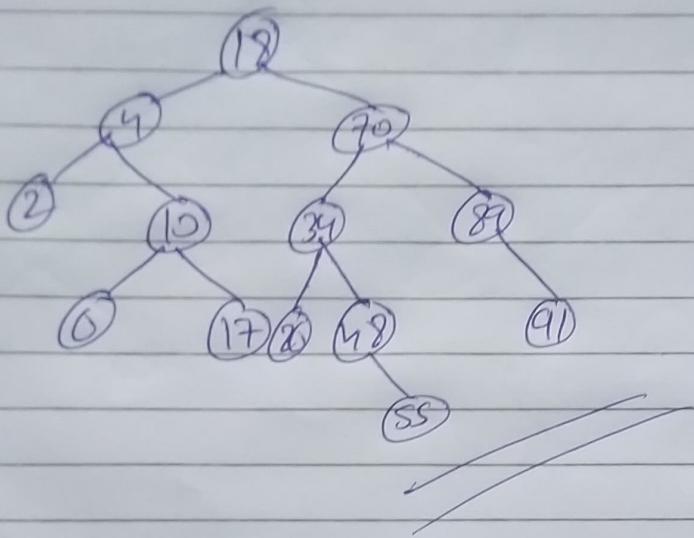




② 34, 26, 18, 89, 70, 91, 2, 4, 6, 17, 48, 55, 10







③ 61, 75, 70, 81, 9, 13, 46, 51, 11, 7, 88, 99, 12, 15

