Barkin Saday
21902967

Question 1:

a)

Preorder Traversal:

$$X \cup A B \cap \setminus C D E$$

Inorder Traversal:

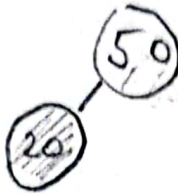$$(A \cup B) \times [(C \setminus D) \cap E]$$

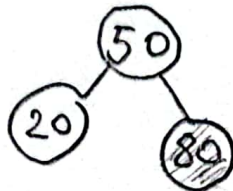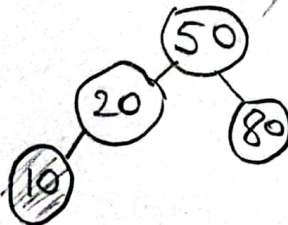**Postorder Traversal:**

$$A B \cup C D \setminus E \cap X$$

b)

Insert 50:

Insert 20:

Insert 80:

Insert 10:

Insert 65:
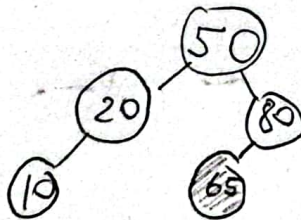
Insert 75:
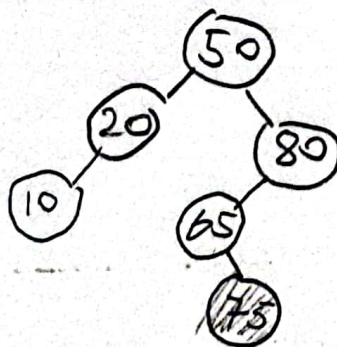
Insert 45:
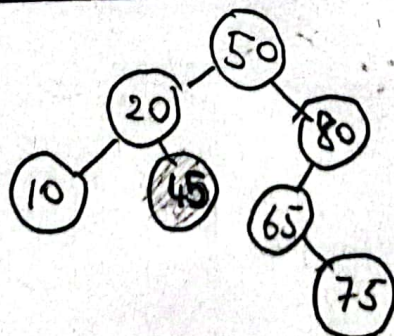
Insert 90:
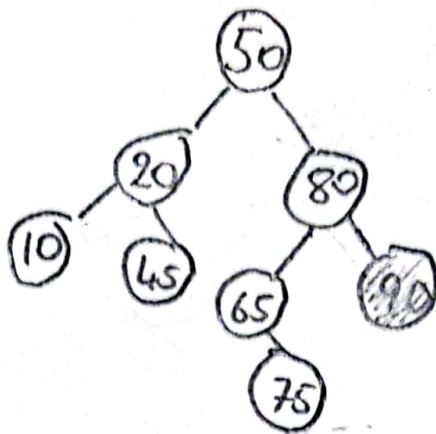
Insert 70:
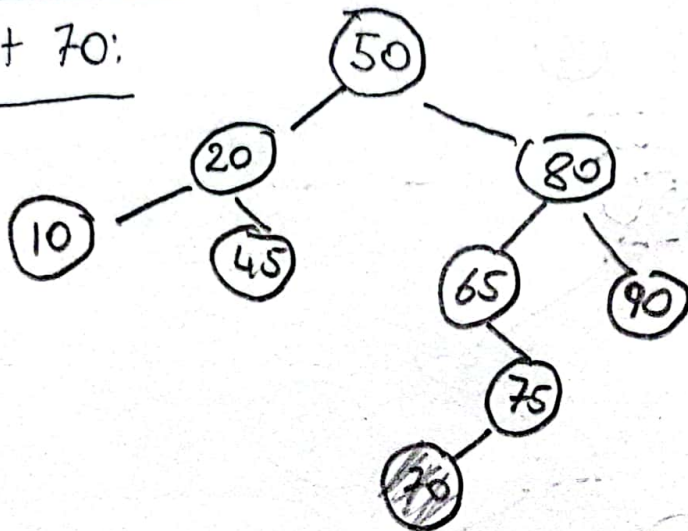
Insert 60:
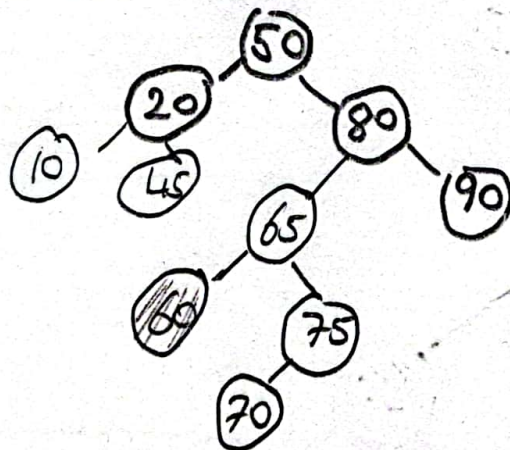
Insert 30:
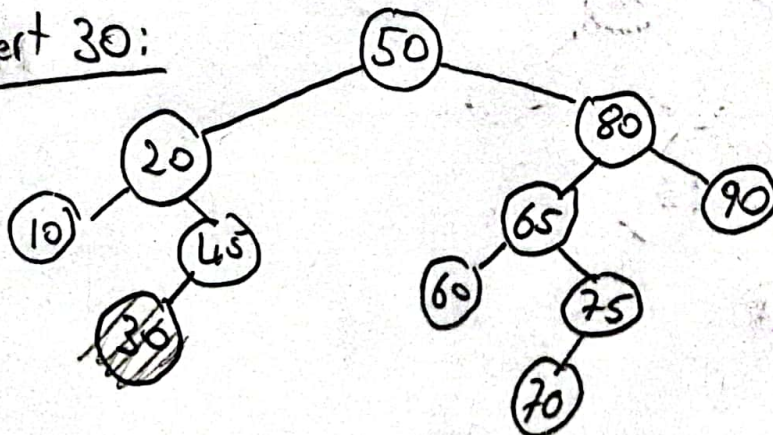
Insert 40:
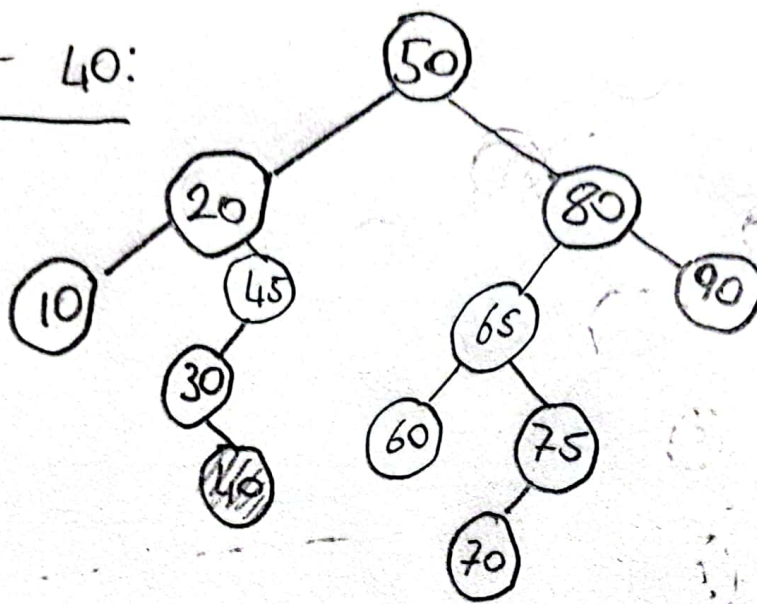
Insert 63:

Delete 10:

Delete 75:

```
              (50)
         /            \
      (20)            (80)
         \           /     \
        (45)      (65)     (90)
       /         /    \
     (30)      (60)   (70)
       \        |
      (40)    (63)
```

Delete 80:

```
              (50)
         /            \
      (20)            (90)
         \           /
        (45)      (65)
       /         /    \
     (30)      (60)   (70)
       \        |
      (40)    (63)
```

Delete 20:

```
           (50)
         /      \
      (45)      (90)
      /        /
    (30)    (65)
      \      /    \
    (40)  (60)   (73)
            |
          (63)
```

Delete 50:

```
              (60)
         /          \
      (45)          (90)
      /            /
    (30)        (65)
      \         /    \
    (40)     (63)   (73)
```
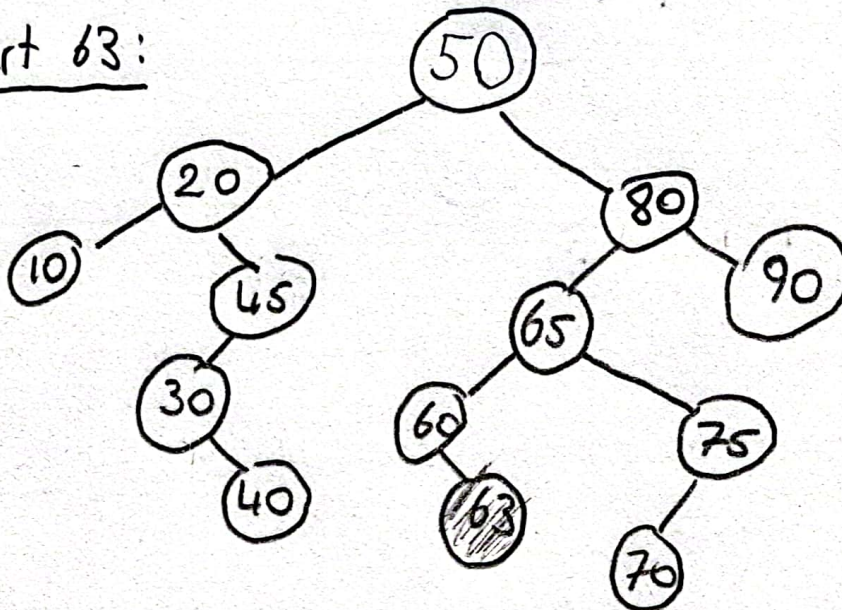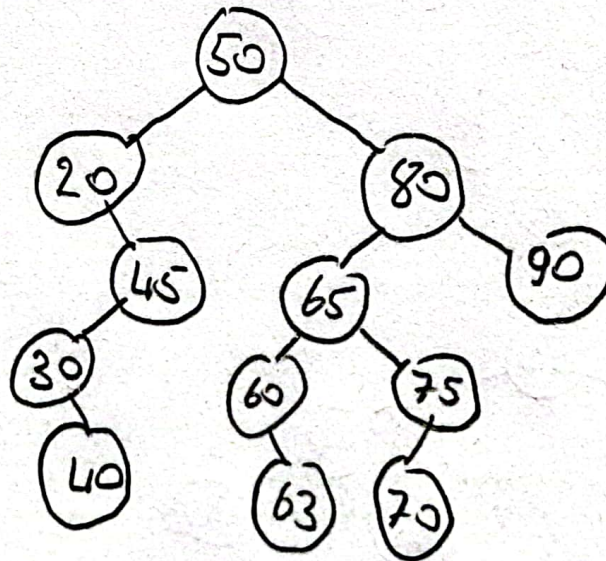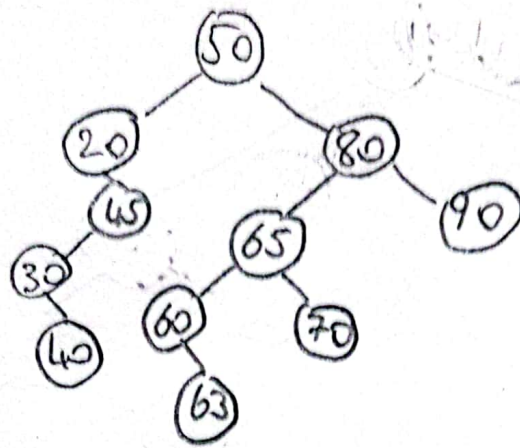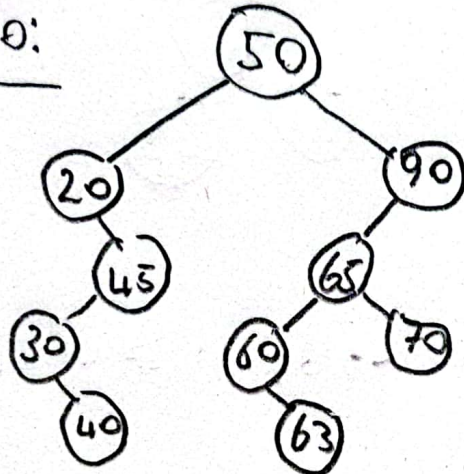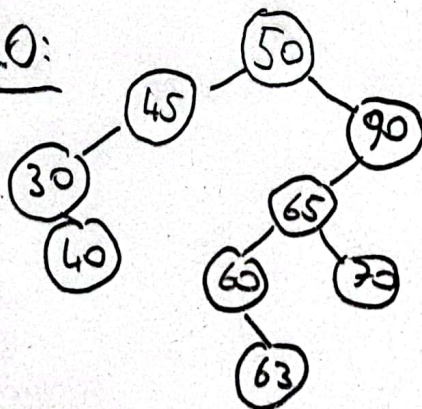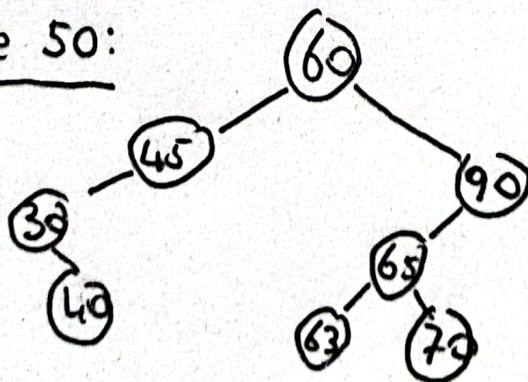
c)
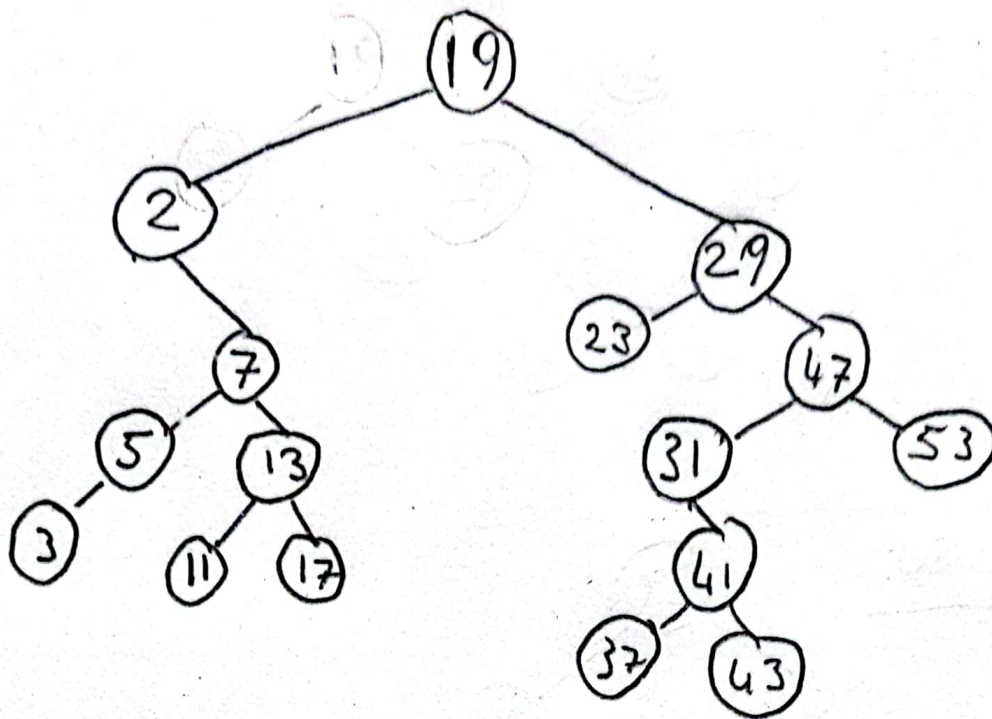
Preorder Traversal Is:

19, 2, 7, 5, 3, 13, 11, 17, 29, 23, 47, 31, 41, 37, 43, 53