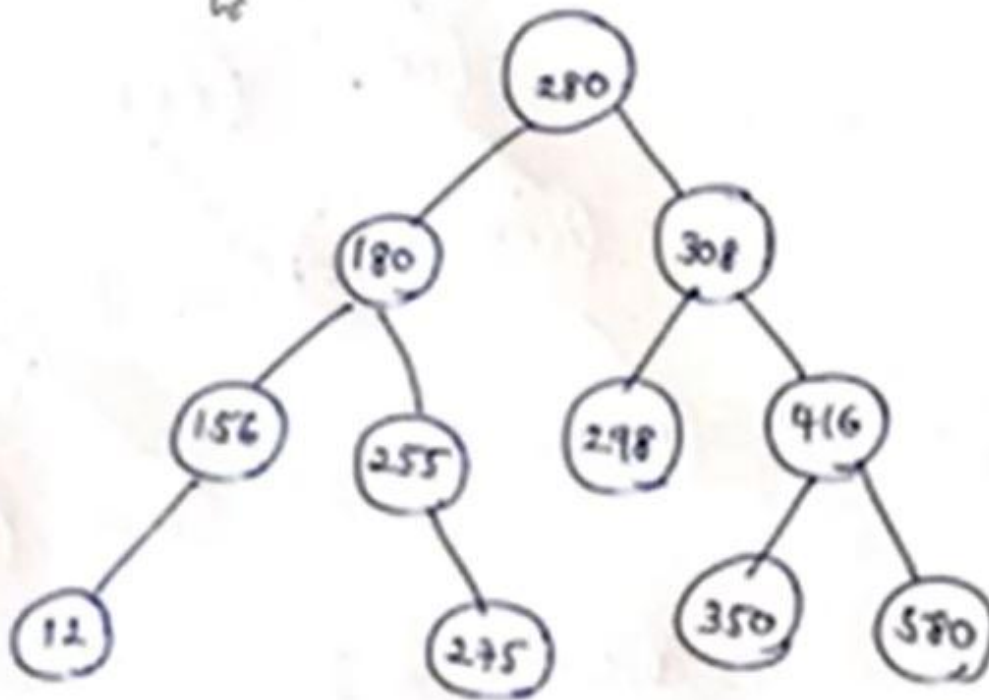Question 1
 Arrange the following sequence of integers into a binary search tree
280 308 180 416 298 350 156 255 580 275 12

Always take the first value in the given sequence as the root in this case 280.

Question
2 Print the elements in the tree built in Question1 using the following traversing methods.
            a) inorder(Left,Parent,Right)/ ascending order
12,156,180,255,275,280,298,308,350,416,580
            b) preorder(Parent,Left,Right)
280,180,156,12.255,275,308,298,416,350,590
            c) postorder(Left,Right,Parent)
12,156,275,255,180,298,350,580,416,308,280

Question 3

Consider the Node class and Tree class given below.

Node
int iData
double dData
Node leftChild
Node rightChild
void displayNode( )

Tree
Node root
Node find(int key)
void insert(int id, double dd)
boolean delete(int id)
void descOrder( )
Node minimum()

i)   Implement a method called **minimum( )** to find the minimum node in a tree.

ii)   Implement a method called **descOrder()** to display the values in the tree in descending order

```
public Node Minnimum (){
    Node current = root;
    while(current.leftChild !=null){
        current = current.leftChild;

    }
    return current;
}
```

ii)
Inorder method displays in ascending order.So we make a minor change to it for it to be in descening order

```
private void decOrder(Node localRoot)
{
  if (localRoot != null)
  {
        inOrder(localRoot.rightChild);
        localRoot.displayNode();
        inOrder(localRoot.leftChild);

  }
}
```

Since method signature is private we'll have to provide a public method to access it.
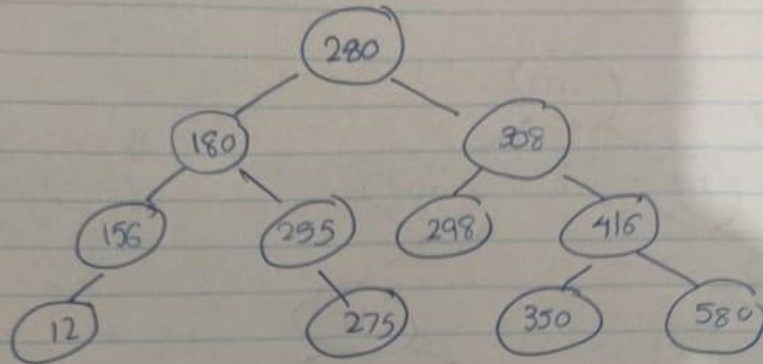
```
Public void Dec(){
      decOrder();
}
```

Question 4

Draw the tree structures for the binary tree created in Question 1 for each of the following delete commands.
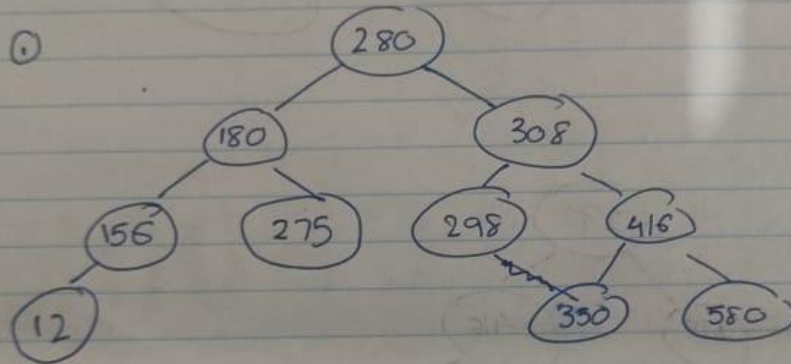
    a) Delete(255)
    b) Delete(308)
    c) Delete (180)
    d) Delete(280)

No :_____   Date ___/___/___

Tree 1 (top)

```
                    280
          180                308
      156     295      298        416
    12          275         350     580
```

(1)

```
                    280
          180              308
      156     275      298     416
    12                  350     580
```

(2)

```
                    280
          180              298
      156     275              416
    12                    350     580
```

(c)

280
275
348
156
416
12
350
580

(d)

298
278
416
156
350
580
12