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Question 1:

```
import java.util.*;
```

```
class Q1 {
```

```
    public static void main(String[] args) {
```

```
        Scanner sc = new Scanner(System.in);
```

```
        System.out.println("Enter the ip address:");
```

```
        String[] ip = sc.nextLine().split("\\.");
```

```
        //checking for validity
```

```
        if(ip.length > 4){
```

```
            System.out.println("Invalid");
```

```
            return;
```

```
        }
```

```
        boolean flag = true;
```

```
        for(int i=0; i<ip.length; i++){
```

```
            if(Integer.parseInt(ip[i]) > 255 ){
```

```
                flag = false;
```

```
                break;
```

```
            }
```

```
        }
```

```
        if(flag)
```

```
            System.out.println("Valid");
```

```
        else{
```

```

        System.out.println("Invalid");

        return;
    }

    //checking the class

    int leftMost = Integer.parseInt(ip[0]);

    int c=0;

    if(leftMost>= 0 && leftMost<=127){

        System.out.println("Class A");

        c=1;
    }

    else if(leftMost>= 128 && leftMost<=191){

        System.out.println("Class B");

        c=2;
    }

    else if(leftMost>= 192 && leftMost<=233){

        System.out.println("Class C");

        c=3;
    }


    //checking network address

    int[] and = new int[4];

    for(int i=0; i<c; i++)

        and[i] = 255;

    String networkAddress = "";

```

```
System.out.println("The network address is:");

for(int i=0; i<ip.length; i++){

    networkAddress += ((Integer.parseInt(ip[i]) & and[i]) + ".");

}

System.out.println(networkAddress.substring(0,networkAddress.length()-1));

}

}
```

Output:

Enter the ip address:

124.50.26.10

Valid

Class A

The network address is:

124.0.0.0

Enter the ip address:

130.50.0.0

Valid

Class B

The network address is:

130.50.0.0

Enter the ip address:

200.100.50.36

Valid

Class C

The network address is:

200.100.50.0

Enter the ip address:

290.100.0.10

Invalid

Question 2:

```
import java.util.*;
```

```
class Q2{  
  
    public static void main(String[] args){  
  
        Scanner sc = new Scanner(System.in);  
  
        System.out.println("Enter the ip address:");  
  
        String[] ip = sc.nextLine().split("/");  
  
        String[] netId = ip[0].split("\\.");  
  
        int hostId = Integer.parseInt(ip[1]);  
  
        int[] subnet = new int[4];  
  
        int c=hostId/8, rem =0;  
  
        if(hostId % 8 != 0){  
  
            rem = hostId % 8;  
  
        }  
  
        int[] temp = new int[8];  
  
        for(int i=0; i<rem; i++)
```

```

temp[i] = 1;

String s = "";

for(int i=0; i<8; i++)

    s += String.valueOf(temp[i]);

int last = Integer.parseInt(s,2);

int i=0;

for( ; i<c; i++){

    subnet[i] = 255;

}

if(i<5 && rem != 0)

    subnet[i]=last;


System.out.println("The subnet mask is:");

System.out.print(subnet[0]);

for(i=1; i<4; i++){

    System.out.print("." +subnet[i]);

}

String networkAddress = "";

    System.out.println("The network address is:");

    for(i=0; i<netId.length; i++){

        networkAddress += ((Integer.parseInt(netId[i]) & subnet[i]) + ".");

    }

System.out.println(networkAddress.substring(0,networkAddress.length()-1));

```

}

}

Output:

124.50.26.10/24

The subnet mask is:

255.255.255.0The network address is:

124.50.26.0

Enter the ip address:

124.50.36.10/27

The subnet mask is:

255.255.255.224The network address is:

124.50.36.0