Question 1

```
if (x > 5) {

    if (y > 5) {
        System.out.println("x and y are > 5");
    }
}
else
    System.out.println("x is <= 5");
```

Question 2

Part a

```
if (x < 10){
    if (y > 10)
        System.out.println("*****");
    else
        System.out.println("#####");
}
System.out.println("$$$$$");
```

Part b

```
if (x < 10) {
    if (y > 10)
        System.out.println("*****");
}
else {
    System.out.println("#####");
    System.out.println("$$$$$");
}
```

Question 3

Main class

```
public class question03 {
    public static void main(String[] args) {

//        Mosis Abhenry, earning 150,000 Euros,
//        Marium Essa, earning 70,000 Euros,
//        Abrahim Rai, earning 30,000 Euros

        Scanner scanner = new Scanner(System.in);

        System.out.println("Enter citizen-1 name:");
        String name1 = scanner.nextLine();
        System.out.println("Enter citizen-1 earning:");
        int earning1 = scanner.nextInt();
        scanner.nextLine();
//        get citizen1's information: name & earning


        System.out.println("Enter citizen-2 name:");
        String name2 = scanner.nextLine();
        System.out.println("Enter citizen-2 earning:");
        int earning2 = scanner.nextInt();
        scanner.nextLine();
//        get citizen2's information: name & earning



        System.out.println("Enter citizen-3 name:");
        String name3 = scanner.nextLine();
        System.out.println("Enter citizen-3 earning:");
        int earning3 = scanner.nextInt();
        scanner.nextLine();
//        get citizen3's information: name & earning

        Account account1 = new Account(name1, earning1);
        Account account2 = new Account(name2, earning2);
        Account account3 = new Account(name3, earning3);
//        create 3 account instances

        double tax1 = taxCalculation(account1.getEarnings());
        double tax2 = taxCalculation(account2.getEarnings());
        double tax3 = taxCalculation(account3.getEarnings());


        System.out.printf(" Name: %s Earning: %s Tax:%s%n ",
                account1.getName(), account1.getEarnings(), tax1);
        System.out.printf("Name: %s Earning: %s Tax:%s%n ",
                account2.getName(), account2.getEarnings(), tax2);
        System.out.printf("Name: %s Earning: %s Tax:%s%n",
                account3.getName(), account3.getEarnings(), tax3);
    }

    public static double taxCalculation(double earnings) {

        if (earnings < 30000){
            return earnings * 0.15;
        }
        else {
```

```
            return (30000 * 0.15) + ((earnings - 30000) * 0.2);
        }

//         earnings < 30000 ?
//         return earnings * 0.15;
//         return (earnings * 0.15) + ((earnings - 30000) * 0.2);
    }
}
```

Account class

```
public class Account {

    String name;
    double earnings;

    public Account(String name, double earnings) {
        this.name = name;
        this.earnings = earnings;

    }


    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public double getEarnings() {
        return earnings;
    }

    public void setEarnings(double earnings) {
        this.earnings = earnings;
    }
}
```

Result

```
Enter citizen-1 name:
Mosis Abhenry
Enter citizen-1 earning:
150000
Enter citizen-2 name:
Marium Essa
Enter citizen-2 earning:
70000
Enter citizen-3 name:
Abrahim Rai
Enter citizen-3 earning:
30000
 Name: Mosis Abhenry Earning: 150000.0 Tax:28500.0
 Name: Marium Essa Earning: 70000.0 Tax:12500.0
 Name: Abrahim Rai Earning: 30000.0 Tax:4500.0
```

Question 4

Main class

```
public class CreditLimitCalculator {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);

        int newBalance;

        System.out.println("Enter account number:");
        int accountNumber = input.nextInt();
        input.nextLine();
//      input account number

        System.out.println("Enter balance at the beginning of the month:
");
        int startBalance = input.nextInt();
        input.nextLine();
//      balance at the beginning of the month

        System.out.println("Enter total of all items charges by the
customers this month: ");
        int totalCharges = input.nextInt();
        input.nextLine();
//      total of all items charges by the customers this month

        System.out.println("Enter total of all credits applied to the
customer's account this month: ");
        int allCredits = input.nextInt();
        input.nextLine();
//      total of all items charges by the customers this month

        System.out.println("Enter allowed credit limit.: ");
        int allowedCredit = input.nextInt();
        input.nextLine();
//      total of all items charges by the customers this month


        Account account1 = new Account(accountNumber, startBalance,
totalCharges, allCredits, allowedCredit);
//

//        newBalance = startBalance - totalCharges - allCredits;
//
//        if (newBalance >= allowedCredit){
//            System.out.println("Account :" + account1.getAccountNumber()
+ "---new balance:" + newBalance);
//        }
//        else {
//            System.out.println("Credit limit exceeded");
//        }

        if (balance(startBalance,totalCharges,allCredits,allowedCredit) !=
-1){
            System.out.println("Account :" + account1.getAccountNumber() +
"--- new balance: " +
balance(startBalance,totalCharges,allCredits,allowedCredit));
        }
        else {
            System.out.println("Credit limit exceeded");
```

```
        }

    }


    public static int  balance(int startBalance, int totalCharges, int
allCredits, int allowedCredit){

        if (startBalance - totalCharges - allCredits >= allowedCredit)
            return startBalance - totalCharges - allCredits;
        else
            return -1 ;


    }
}
```

class Account

```
public class Account {
    int accountNumber;
    int startBalance;
    int totalCharges;
    int allCredits;
    int allowedCredit;



    public int getAccountNumber() {
        return accountNumber;
    }

    public void setAccountNumber(int accountNumber) {
        this.accountNumber = accountNumber;
    }

    public int getStartBalance() {
        return startBalance;
    }

    public void setStartBalance(int startBalance) {
        this.startBalance = startBalance;
    }

    public int getTotalCharges() {
        return totalCharges;
    }

    public void setTotalCharges(int totalCharges) {
        this.totalCharges = totalCharges;
    }

    public int getAllCredits() {
        return allCredits;
    }

    public void setAllCredits(int allCredits) {
        this.allCredits = allCredits;
    }
```

```
    public int getAllowedCredit() {
        return allowedCredit;
    }

    public void setAllowedCredit(int allowedCredit) {
        this.allowedCredit = allowedCredit;
    }

    public Account(int accountNumber, int startBalance, int
totalCharges, int allCredits, int allowedCredit) {
        this.accountNumber = accountNumber;
        this.startBalance = startBalance;
        this.totalCharges = totalCharges;
        this.allCredits = allCredits;
        this.allowedCredit = allowedCredit;
    }
}
```

result
Scenario 1

```
Enter account number:
10001
Enter balance at the beginning of the month:
1000
Enter total of all items charges by the customers this month:
500
Enter total of all credits applied to the customer's account this month:
300
Enter allowed credit limit.:
300
Credit limit exceeded
```

Scenario 2

```
Enter account number:
10002
Enter balance at the beginning of the month:
1000
Enter total of all items charges by the customers this month:
500
Enter total of all credits applied to the customer's account this month:
300
Enter allowed credit limit.:
100
Account :10002--- new balance: 200
```