1.

Take 10 integers from keyboard using loop and print their average value on the screen.

Solution:

```java
import java.util.Scanner;
class Ans{
  public static void main(String[] args){
    Scanner s = new Scanner(System.in);
    int sum = 0;
    for(int i = 0; i<10;i++){
      System.out.println("Enter a number");
      sum = sum+s.nextInt();
    }
    System.out.println("Sum is "+sum);
  }
}
```

2.

Print the following patterns using loop :

a.
```
*
**
***
****
```

b.
```
  *
 ***
*****
 ***
  *
```

c.
```
1010101
 10101
  101
   1
```

3.

Print multiplication table of 24, 50 and 29 using loop.

Solution:

```java
class Ans{
  public static void main(String[] args){
    for(int i = 1; i<=10;i++){
      System.out.println("24 * "+i+"\t=\t"+(24*i));
    }
  }
}
```

4.

Print ASCII values and their equivalent characters. ASCII value vary from 0 to 255.

5.

Factorial of any number n is represented by n! and is equal to 1*2*3*....*(n-1)*n. E.g.-

4! = 1*2*3*4 = 24

3! = 3*2*1 = 6

2! = 2*1 = 2

Also,

1! = 1

0! = 0

Write a Java program to calculate factorial of a number.

Solution:

```java
import java.util.Scanner;
class Ans{
  public static void main(String[] args){
    Scanner s = new Scanner(System.in);
    System.out.println("Enter a number");
    int x = s.nextInt();
    int fact  =  1;
    for(int i = x; i>=1 ;i--){
      fact = fact*i;
    }
    System.out.println("Factorial is "+fact);
  }
}
```

6.

Write a program to find greatest common divisor (GCD) or highest common factor (HCF) of given two numbers

7.

Take integer inputs from user until he/she presses q (Ask to press q to quit after every integer input).
Print average and product of all numbers.

Solution:

```java
import java.util.*;

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

String choice = "";

int sum = 0;
int product = 1;
int count = 0;
Scanner input = new Scanner(System.in);

while(!choice.equals("q")){
    System.out.println("Enter a number or q to quit");
    choice = input.next();

    if(!choice.equals("q")){
        int number = Integer.parseInt(choice);
        sum = sum+number;
        product = product*number;
        count++;
    }
}

System.out.println("Product is: "+product+"\nAverage is: "+((float)sum/count));

}
}
```

8.

Write an infinite loop.
A inifinte loop never ends. Condition is always true.