JAVA Class 1 (Codes)

Q1. Print numbers from 5 to 1.

```
public static void printNumbers(int n) {
            if(n == 0) {
        return;
        }
        System.out.println(n);
        printNumbers(n-1);
    }
```

Q2. Print numbers from 1 to 5.

```
public static void printNumbers(int n) {
            if(n == 6) {
        return;
        }
        System.out.println(n);
        printNumbers(n+1);
    }
```

Q3. Print the sum of first n natural numbers.

```
class Recursion1 {
    public static void printSum(int n, int sum) {
        if(n == 0) {
            System.out.println(sum);
            return;
        }

        sum += n;
        printSum(n-1, sum);
    }
    public static void main(String args[]) {
        printSum(5, 0);
    }
}
```

Q4. Print factorial of a number n.

```
class Recursion1 {
   public static void printFactorial(int n, int fact) {
       if(n == 0) {
           System.out.println(fact);
           return;
       }

       fact *= n;
       printFactorial(n-1, fact);
   }
   public static void main(String args[]) {
       printFactorial(5, 1);
   }
}
```

Q5. Print the fibonacci sequence till nth term.

```
class Recursion1 {
   public static void printFactorial(int a, int b, int n) {
       if(n == 0) {
           return;
       }

       System.out.println(a);
       printFactorial(b, a+b, n-1);
   }
   public static void main(String args[]) {
       printFactorial(0, 1, 5);
   }
}
```

Q6. Print x^n (with stack height = n)

```
class Recursion1 {
   public static int printPower(int x, int n) {
       if(n == 0) {
           return 1;
       }

       if(x == 0) {
```

```
            return 0;
        }
```



```
        int x_ = printPower(x, n-1);
        int xn = x * x_;
        return xn;
    }
    public static void main(String args[]) {
        int x = 2, n = 5;
        int output = printPower(x, n);
        System.out.println(output);
    }
}
```

Q7. Print x^n (with stack height = logn)

```
class Recursion1 {
    public static int printPower(int x, int n) {
        if(n == 0) {
            return 1;
        }

        if(n % 2 == 0) {
            return printPower(x, n/2) * printPower(x, n/2);
        }

        else {
            return x * printPower(x, n/2) * printPower(x, n/2);
        }
    }

    public static void main(String args[]) {
        int x = 2, n = 5;
        int output = printPower(x, n);
        System.out.println(output);
    }
}
```