Task 1.

In your group, discuss and number the lines of code according to the program execution sequence. Put numbers 1, 2, etc. in front of each row. If any line is executed several times, then there should be several numbers in front of that line.

```java
class Averages {
    public static double mathMean(double num1, double num2) {
        double summa = num1 + num2;
        return summa/2;
    }

    public static void main(String[] args) {
        double a = 1.5;
        double b = 2.25;
        double c = mathMean(a, b);

        System.out.println("The mean of numbers " + a + " and " + b + " is " + c);
        System.out.println("The mean of 3.4 and -3.4 is " + mathMean(-3.4, 3.4));
    }
}
```

Add into the main method, after line `double c = mathMean(a, b)`, the following line:

```java
System.out.println("The sum of numbers " + a +" and " + b + " is " + summa);
```

In your group, discuss the possible program outputs. Put your hypothesis here:

Check your hypothesis. Explain the output of the program here:

Task 2. Google and sketch the flow diagrams of the following loops.
(Please use general terms in the diagrams like conditions, initialization, update expression, statements in loop, etc.)

```
for loop   while loop   do-while loop
```
Task 3. In your group, choose an appropriate loop type for each task and explain your choice.

1. Output integers from 1 to 5.

2. Create 2 variables: sum and limit; then add value 2 to variable sum until sum becomes greater than limit.

3. Output the following text using a loop: I like Java. The program has to print the message out at least once irrespectively of the loop conditions.

Task 4. The following program contains 14 invalid syntax or fatal errors. Correct the code.

```java
public class test {
    public void main(String args) {
        Scanner scan = Scanner();
        double a = scan.nextInt();
        int b = 3.5;
        int c = a/b;
        System.out.println(a + " % " + b + " = " + c);
        if (c=3){
            String msg = "Equal";
            System.out.println(msg)
        } else{
            System.out.println('Not equal');
        }
        System.out.println(msg);
        for (int i = 0, i < 5; i++){
            System.out.println(i);
        }
    }
}
```

Task 5. What is the output of the program?

```java
int[] jarj1 = {1, 3, 6};
int[] jarj2;
jarj2 = jarj1;
System.out.println(jarj1[1]);
System.out.println(jarj2[1]);
jarj2[1]=4;
System.out.println(jarj2[1]);
System.out.println(jarj1[1]);
```

Check your answer on the computer and explain the output.