1- Fix all the compilation errors so that the program will compile successfully. Once the program compiles, execute the program, and compare its output with the sample output; then eliminate any logic errors that may exist. The sample output demonstrates what the program's output should be once the program's code is corrected.

Sample Output

```
Enter first integer:
5
Enter second integer:
3
Enter third integer:
2
The sum is 10
The product is 30
The average is 3
```

Broken Code

```
 import java.util.Scanner;
public class Arithmetic
 {
 import java.util.Scanner;
public static void main( String args[] ) {
 Scanner input = new Scanner( System.in );
int num1, num2, num3;
int sum;
int product;
int double average ;
System.out.println( "Enter first integer:" );
num1 == input.nextInt();
System.out.println( "Enter second integer:" );
num2 == input.nextInt();
System.out.println( "Enter third integer:");
num3 == input.nextInt();
 sum = num1 + num2 + num3;
product = num1 * num2 * num3;
 average = ( num1 + num2 + num3 ) / 3.0;
 System.out.printf( "The sum is %d\nThe product is %d\nThe average is %d%f\n",
sum,product, average );
 }
 } // end class Arithmetic
```

2-Write an application that inputs from the user the radius of a circle as an integer and prints the circle's diameter, circumference and area using the floating-point value 3.14159 for π. [*Note:* You may also use the predefined constant Math.PI for the value of π. This constant is more precise than the value 3.14159. Class Math is defined in package java.lang. Classes in that package are imported automatically, so you do not need to import class Math to use it.] Use the following formulas (*r* is the radius):

diameter = 2*r*

circumference = 2π*r*

area = πr^2

Your output should appear as follows:

```
Enter radius: 3
Diameter is 6
Area is 28.274334
Circumference is 18.849556
```

```java
package lab.assignment2;
import java.util.Scanner;

public class L2_Q2 {

    public static void main(String[] args) {
        Scanner input = new Scanner( System.in );
        System.out.print("Enter the radius of circle in integer: ");
        int rad = input.nextInt();
        if(rad >= 0) {
        System.out.printf("Diameter is %d%nArea is %f%nCircumfrence is %f%n",
                (2*rad), (Math.PI*rad*rad), (2*Math.PI*rad));}
        else {System.out.print("Invalid number, try again and enter a postive integer: ");}
    }
}
```

```
<terminated> L2_Q2 [Java Application] C:\Users\F
Enter the radius of circle in integer: 4
Diameter is 8
Area is 50.265482
Circumfrence is 25.132741
```

3- Write a Java application that uses a loop to read in 10 numbers and calculates and prints their sum.

```
Please enter ten integers
2
4
6
8
10
12
14
16
18
20
The sum of the first ten integers is 110
The average of the first ten integers is 11
```

*L2_Q3.java

```java
package lab.assignment2;
import java.util.Scanner;
public class L2_Q3 {
    public static void main(String[] args) {
        Scanner input = new Scanner( System.in );
        int i = 0;
        int sum = 0;
        System.out.println("Eneter ten integers");

        while (i<10) {
            int inp = input.nextInt();
            sum += inp;
            i++;
        }
        System.out.printf("The sum of the first ten integers is %d%n"
                + "The average of the first ten integers is %f%n", sum, sum/10.0);
    }
}
```

```
Eneter ten integers
2
4
6
8
10
12
14
16
18
20
The sum of the first ten integers is 110
The average of the first ten integers is 11.000000
```