Name: Ahmad Baseer **Roll no: 124**

OOP LAB #02

Objective: To get familiarity with the class literals and math functions in java.

Exercise #01: Mr. Calvin paints pictures and sells them at art shows he charges $56.25 for a large painting and $25.80 for a small painting. Last month he sold six large and three small paintings how much did he earn. Note: change the amount in rupees and print the result.

Source code:

```
package earning;
public class Earning {
public static void main(String[] args) {
double Lp=56.25;
double Sp=25.80;
System.out.println("Mr.calvin charges $56.25 for a large Painting and $25.80 for a small
painting!");
System.out.println("Last month he sold six large and three small" +
" paintings how much did he earn?");
System.out.println("Last month total price he earned in dollar is:"+(6*(Lp)+3*(Sp)));
System.out.println("Last month total price he earned in Rs is:"+(6*(Lp)+3*(Sp))*100);
}
}
```

Output:

```
Mr.calvin charges $56.25 for a large Painting and $25.80 for a small painting!
Last month he sold six large and three small paintings how much did he earn?
Last month total price he earned in dollar is:414.9
Last month total price he earned in Rs is:41490.0
```

Exercise #02: Write a program which takes two numbers as input from user and calculate sum And difference of both numbers.

Source code:

```
package addandsub;
import java.util.Scanner;
public class AddandSub {
public static void main(String[] args) {
int a,b;
Scanner sc=new Scanner(System.in);
System.out.println("Eneter first no:");
a=sc.nextInt();
System.out.println("Eneter Second no:");
b=sc.nextInt();
System.out.println("Value of thier Addition is:"+(a+b));
System.out.println("Value of thier Subtraction is:"+(a-b)); } }
```

Output:

```
Eneter first no:5
Eneter Second no:6
Value of thier Addition is:11
Value of thier Subtraction is:-1
```

Exercise #03: Find more function of Math class and write a program to demonstrate all Math function in Java.

Source code:

```
package mathfunctions;
public class MathFunctions {
public static void main(String[] args) {
double a=Math.PI;
System.out.println("Absolute value of -3 is:"+Math.abs(-3));
System.out.println("Max value from 2 & 3 is:"+Math.max(2,3));
System.out.println("Min value from 4 & 5is:"+Math.min(4,5));
System.out.println("Round of the decimal number of 25.6789 is:"+Math.round(25.6789));
System.out.println("Square root of 100 is:"+Math.sqrt(100));
System.out.println("Cube root of 27  is:"+Math.cbrt(27));
System.out.println("Value of 3 to the raised power 6 is:"+Math.pow(3,6));
System.out.println("Logarithm of 6 is: " + Math.log(6));
System.out.println("The log of 56 to the base 10 is: " + Math.log10(56));
System.out.println("The log of 5+1 is: " +Math.log1p(5));
System.out.println("Sine value of 30 is: " +Math.sin(30));
System.out.println(" Arc Sine value of 0.5 is: " +Math.asin(0.5));
System.out.println("Hyperbolic Cosine value of a is: " +Math.cosh(45));
//Similarly we can find value of any trignometric function as well as degrees.
System.out.println("Value of 45 degree in radians is: " +Math.toRadians(45));
System.out.println("Value of pi radians in degrees is:"+Math.toDegrees(a));
}
}
```

Output:

```
Absolute value of -3 is:3
Max value from 2 & 3 is:3
Min value from 4 & 5is:4
Round of the decimal number of 25.6789 is:26
Square root of 100 is:10.0
Cube root of 27  is:3.0
Value of 3 to the raised power 6 is:729.0
Logarithm of 6 is: 1.791759469228055
The log of 56 to the base 10 is: 1.7481880270062005
The log of 5+1 is: 1.791759469228055
Sine value of 30 is: -0.9880316240928618
Arc Sine value of 0.5 is: 0.5235987755982989
Hyperbolic Cosine value of a is: 1.7467135528742547E19
Value of 45 degree in radians is: 0.7853981633974483
Value of pi radians in degrees is:180.0
```

Exercise #04: Write a program to solve quadratic equation using Math function.

Source code:

```
package quadeq;
import java.util.Scanner;
public class QuadEq {
public static void main(String[] args) {
int a,b,c;
double d,e,f,g;
Scanner sc=new Scanner(System.in);
System.out.print("Plz Enter First Coefficient:");
a=sc.nextInt();
System.out.print("Plz Enter Second Coefficient:");
b=sc.nextInt();
System.out.print("Plz Enter Constant Value:");
c=sc.nextInt();
d=((b*b)-4*(a*c));
e=Math.pow(d,0.5);
f=(-b+e)/2*a;
System.out.println("First root of equation is:"+f);
g=(-b-e)/2*a;
System.out.println("Second root of equation is:"+g);   }   }
```

Output:

```
Plz Enter First Coefficient:-23
Plz Enter Second Coefficient:12
Plz Enter Constant Value:5
First root of equation is:-144.62873173122367
Second root of equation is:420.62873173122364
```

Exercise #05: Take a three-digit number from user, separate each digit of the number and sum them

For example: 123 =1+2+3= 6.

Source code:

```
package addition;
import java.util.Scanner;
public class Addition {
public static void main(String[] args) {
int a,no1,no2,no3;
Scanner sc=new Scanner(System.in);
System.out.print("Plz enter your number:");
a=sc.nextInt();
no1 = a/100;
no2= (a % 100)/10;
no3 = a% 10;
System.out.printf("%d+%d+%d will be %d\n",no1,no2,no3,no1+no2+no3);   }   }
```

Output:

```
Plz enter your number: 645
6+4+5 will be 15
```