Lab program 1

Develop a java program that prints all real solutions to the quadratic equation $ax^2 + bx + c = 0$. Read in a, b, c and use the quadratic formula. if the discriminant $b^2 - 4ac$ is negative, display a message stating that there ~~the discriminant~~ are no real roots.

```
import java.util.Scanner;
public class quadratic equation {
    public static void main (String [] args) {
    Scanner sscanner = new Scanner (System.in);
    System.out.println ("Enter value of a");
    double a = scanner.nextDouble ();
    System.out.println ("Enter value of b");
    double b = scanner.nextDouble ();
    System.out.println ("Enter value of c");
    block c = scanner.nextDouble ();
    Scanner.close ();
    double discriminant = b*b - 4*a*c;

if (discriminant < 0) {
    System.out.println ("There are no real solutions");
    } else if (discriminant == 0) {
        double root = -b/(2*a);
        System.out.println ("There is one real solution x = "+root);
    } else {
        double root 1 = (-b + Math.sqrt(discriminant))/(2*a);
```

```
double root2 = (-b - Math.sqrt(discriminant)) / (2 * a);
System.out.println("There are two real solutions: x1
        = " + root1 + ", x2 = " + root2);
    }
}
}
```

Output

Enter value of a : 10
Enter value of b : 15
enter value of c : 2

There are two real solutions: $x_1 = -0.1479$, $x_2 = -1.35207$