Q1. Develop a Java program that prints all real solutions to Quadratic equation $ax^2+bx+c=0$. Read in a, b, c and use the quadratic formula. If the discriminate b^2-4ac is negative, display a message stating that there are no real solutions

Ans

```
import java.util.Scanner

public class Quadratic{
    public static void main(String args[]){
        Scanner ob= new Scanner(System.in);
        System.out.println("Enter coefficients of a, b and c ");
        double a = ob.nextDouble();
        double b = ob.nextDouble();
        double c = ob.nextDouble();
        double d = b*b - 4*a*c;

        if (d>0)
        {
            double r1 = (-b + Math.sqrt(d))/(2*a);
            double r2 = (-b - Math.sqrt(d))/(2*a);
            System.out.println("Root 1 : "+r1);
            System.out.println("Root 2 : "+r2);
        }
        else if (d==0)
        {
            double r = -b/(2*a);
            System.out.println("Root : "+root);
        }
        else
        { System.out.println("No real solutions");
```

```
    }
  }
}
```

Output:

```
Enter coefficient of a : 1
Enter coefficient of b : -3
Enter coefficient of c : 2
The equation has two real and distinct roots :
Root 1 : 2.0
Root 2 : 1.0
```