Lab1 Program:
Develop a Java program that prints all real solutions to the quadratic equation ax2 +bx+c = 0.
Read in a, b, c and use the quadratic formula. If the discriminate b2

-4ac is negative, display a

message stating that there are no real solutions.

SOURCE CODE:

```
import java.util.*;
class lab1 {
	public static void main(String ss[]) {
		double r1,r2;
		Scanner s=new Scanner(System.in);
		System.out.println("Enter the coefficients of the quadratic equation");
		System.out.println("Enter a");
		double a = s.nextDouble();
		System.out.println("Enter b");
		double b = s.nextDouble();
		System.out.println("Enter c");
		double c = s.nextDouble();
		double d = (b*b)-(4*a*c);
		if(d>0)
		{
			System.out.println("Roots are real and different");
			r1 = (-b + Math.sqrt(d))/(2*a);
			r2 = (-b - Math.sqrt(d))/(2*a);
			System.out.println("root1 = "+r1+"\nroot2 = "+r2);
		}
		else if(d==0)
		{
			System.out.println("Roots are real and equal");
			r1=r2= -b/(2*a);
			System.out.println("root1 = root2 = "+r1);
		}
		else
		{
			System.out.println("No real solutions");
		}
	}
}
```

OUTPUT:

CASE 1:REAL AND DIFFERENT ROOTS

```
D:\Kusum\OOJ2020>java lab1
Enter the coefficients of the quadratic equation
Enter a
1
Enter b
-5
Enter c
6
Roots are real and different
root1 = 3.0
root2 = 2.0
```

CASE 2:REAL AND EQUAL ROOTS

```
D:\Kusum\OOJ2020>java lab1
Enter the coefficients of the quadratic equation
Enter a
1
Enter b
2
Enter c
1
Roots are real and equal
root1 = root2 = -1.0
```

CASE 3:NO REAL SOLUTIONS

```
D:\Kusum\OOJ2020>java lab1
Enter the coefficients of the quadratic equation
Enter a
1
Enter b
2
Enter c
3
No real solutions
```