Develop a Java program that prints all real solutions to the quadratic equation ax2+bx+c=0. Read a,b,c and use the quadratic formula.If the discriminant b2-4ac is negative,display a message stating that there is no real solution.

Quadratic Equation

```
import java.util.Scanner;
import java.lang.Math;
public class QuadraticEquation {
public static void main (String args[]){
float a,b,c,d;
double root1, root2;
Scanner s = new Scanner (System.in);
System.out.println ("Enter coefficients : ");
a = s.nextFloat();
b = s.nextFloat();
d = (b*b - (4*a*c));
if (a==0) {
System.out.println (" Not a quadratic equation");
}
else if (d>0) {
root1 = (-b + Math.Sqrt(d)) / (4*a*c);
root2 = (-b - Math.Sqrt(d)) / (4*a*c);
System.out.println ("Real and distinct roots are
: " + root1 + " and " + root2);
}
else if (d<0){
root1 = -b / (2*a);
root2 = d / (2*a);
System.out.println (" Real and distinct roots are:
" + root1 + " and " + root2);

}
else if (d<0) {
root1 = -b / (2*a);
root2 = d / (2*a);
System.out.println ("Imaginary roots and distinct
are: " + root1 + "+i" + root2 and
```

```
        }
        else if (d == 0){
        root1 = root2 = -b / (2*a);
        System.out.println("Real roots are: "+root1+" and "+root2);
        }
    }
}
```

Output

1) Enter the co-efficient : 1, -4, 6
Imaginary roots and distinct are R.0+i-4.0 and R.0-i-4.0

2) Enter the co-efficient 0, 5, 6
Not a quadratic equation

3) Enter the co-efficient 1, 10, 5
Real and distinct roots are : -0.05278404 and -0.94721359

4) Enter the co-efficient 2, 4, 2
Real roots are : -1.0 and -1.0

idy

```
C:\Users\bmsce\Desktop>java QuadraticEquation
Enter coefficients:
1
10
5
Real and distinct roots are:-0.052786404500042O4 and -0.947213595499958
```

```
C:\Users\bmsce\Desktop>java QuadraticEquation
Enter coefficients:
1
-4
6
Imaginary roots and distinct are:2.0+i-4.0 and 2.0-i-4.0
```

```
C:\Users\bmsce\Desktop>java QuadraticEquation
Enter coefficients:
0
5
6
Not a quadratic equation
```

```
C:\Users\bmsce\Desktop>java QuadraticEquation
Enter coefficients:
1
-4
8
Imaginary roots and distinct are:2.0+i-8.0 and 2.0-i-8.0
```

```
C:\Users\bmsce\Desktop>java QuadraticEquation
Enter coefficients:
2
4
2
Real roots are:-1.0and-1.0
```