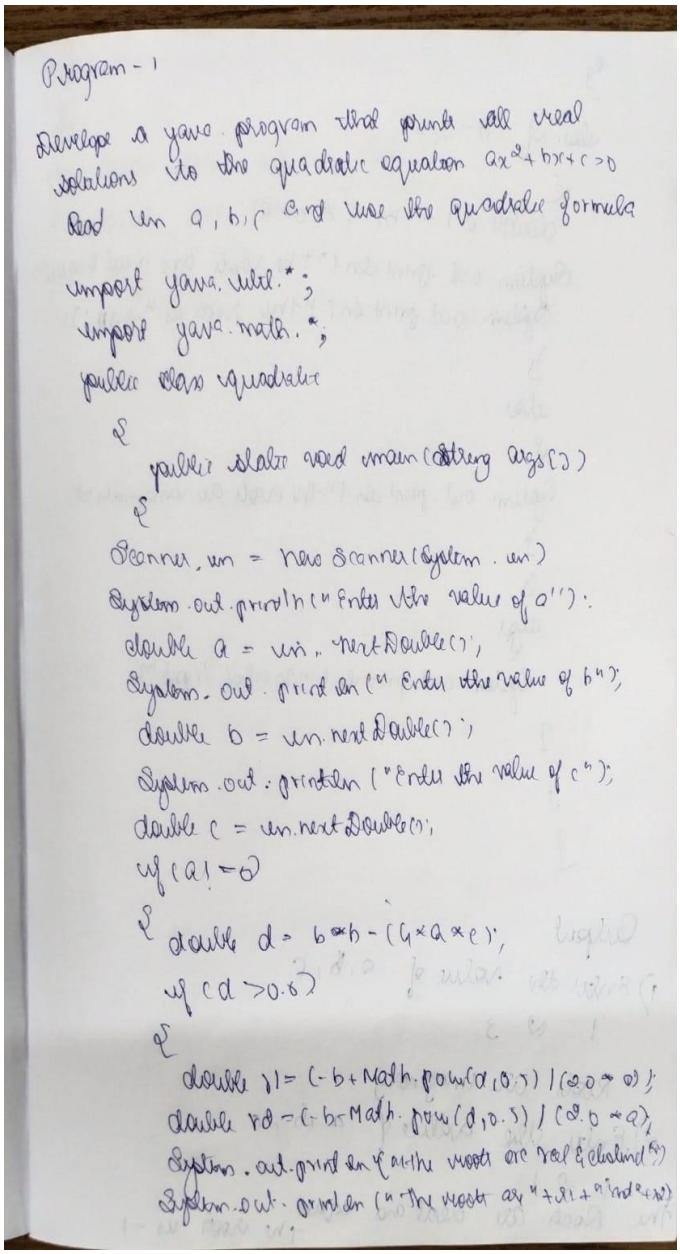
LAB PROGRAM -1

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.

CODE

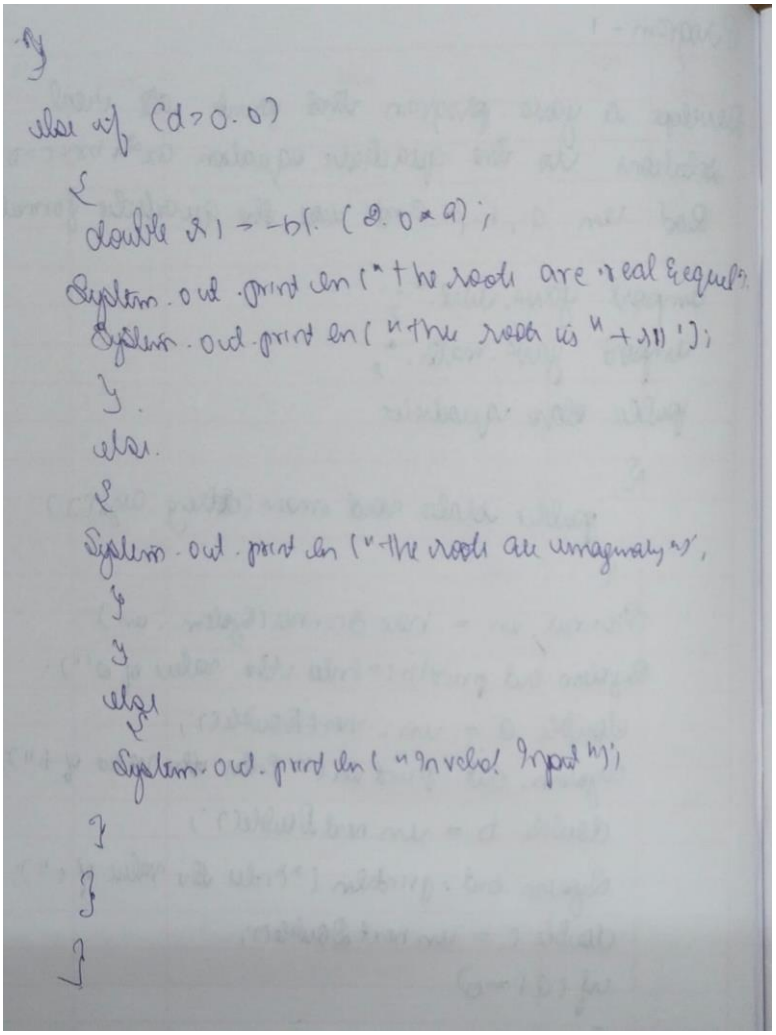
:



Program - 1

Develope 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

```
import java.util.*;
import java.math.*;
public class quadratic
{
   public static void main(String args[])
   {
Scanner in = new Scanner(System.in)
System.out.println("Enter the value of a");
double a = in.nextDouble();
System.out.println("Enter the value of b");
double b = in.nextDouble();
System.out.println("Enter the value of c");
double c = in.nextDouble();
if(a!=0)
{ double d = b*b-(4*a*c);
  if(d>0.0)
  {
    double r1=(-b+Math.pow(d,0.5))/(2.0*a);
    double r2=(-b-Math.pow(d,0.5))/(2.0*a);
    System.out.println("the roots are real & distinct");
    System.out.println("the roots are "+r1+" and "+r2);
```



OUTPUT:

```
C:\Users\bmsce\Desktop\1bm21cs062>java quadratic
enter the value of a,b,c
1 2 3
the roots are imaginary

C:\Users\bmsce\Desktop\1bm21cs062>java quadratic
enter the value of a,b,c
1 2 1
the roots are real and equal
the roots is-1.0

C:\Users\bmsce\Desktop\1bm21cs062>java quadratic
enter the value of a,b,c
3 2 1
the roots are imaginary

C:\Users\bmsce\Desktop\1bm21cs062>java quadratic
enter the value of a,b,c
4 6 2
the roots are real and distinct
The roots are-5.75and-6.25
```