QUADRATIC ROOT EQUATION

```
import java.util.Scanner;
class ans{
public static void main(String args[])
{
System.out.println("enter three numbers");
double root1,root2;
Scanner sc=new Scanner(System.in);
double a=sc.nextDouble();
double b=sc.nextDouble();
double c=sc.nextDouble();
double d=(b*b)-(4*a*c);
if(d==0)
{
root1=-b/(2*a);
System.out.println("roots are equal\nroot1= "+root1+"\nroot2= "+root1);
}
else if(d>0)
{
root1=(-b+Math.sqrt(d))/(2*a);
root2=(-b-Math.sqrt(d))/(2*a);
System.out.println("roots are real and distinct\nroot1="+root1+"\nroot2="+" "+root2);
}
else
{
root1=-b/(2*a);
root2=(Math.sqrt(-d))/(2*a);
System.out.println("roots are imaginary");
System.out.format("root1= %2f +i(%2f)\n",root1,root2);
System.out.format("root2= %2f -i(%2f)\n",root1,root2);
}}}
```

Command Prompt

```
C:\Users\Admin\Desktop\1BM21CS239>javac ans.java

C:\Users\Admin\Desktop\1BM21CS239>java ans
enter three numbers
1
1
1
roots are imaginary
root1= -0.500000 +i(0.866025)
root2= -0.500000 -i(0.866025)

C:\Users\Admin\Desktop\1BM21CS239>java ans
enter three numbers
1
2
1
roots are equal
root1= -1.0
root2= -1.0

C:\Users\Admin\Desktop\1BM21CS239>java ans
enter three numbers
1
4
1
roots are real and distinct
root1=-0.2679491924311228
root2= -3.732050807568877

C:\Users\Admin\Desktop\1BM21CS239>
```