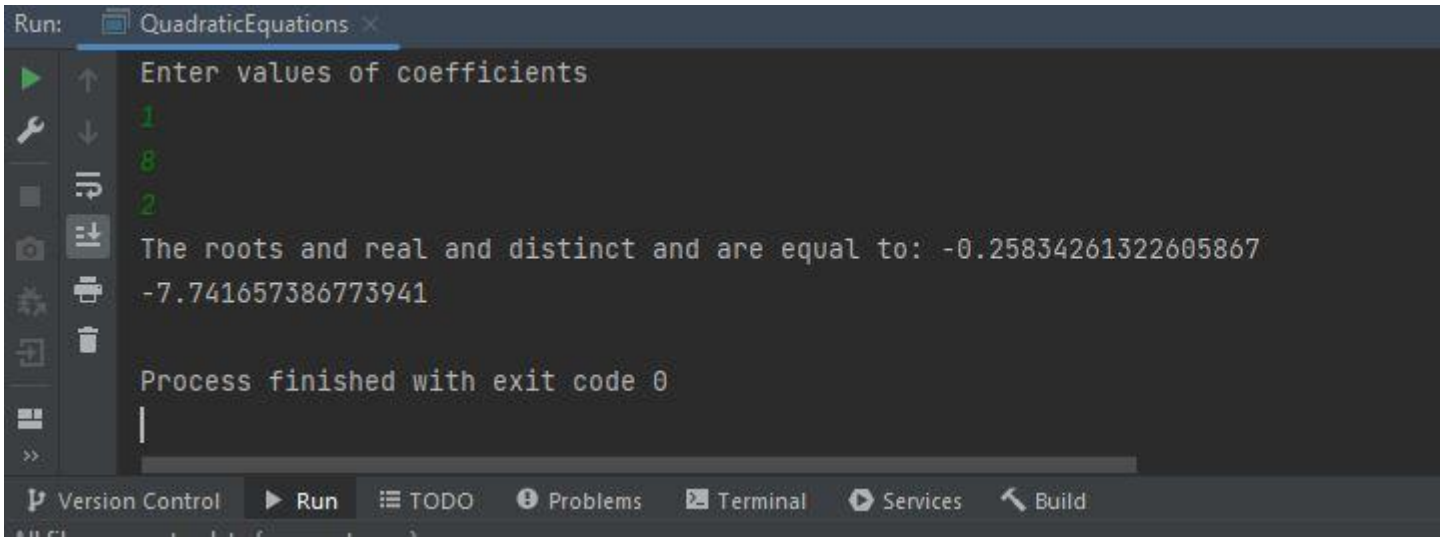
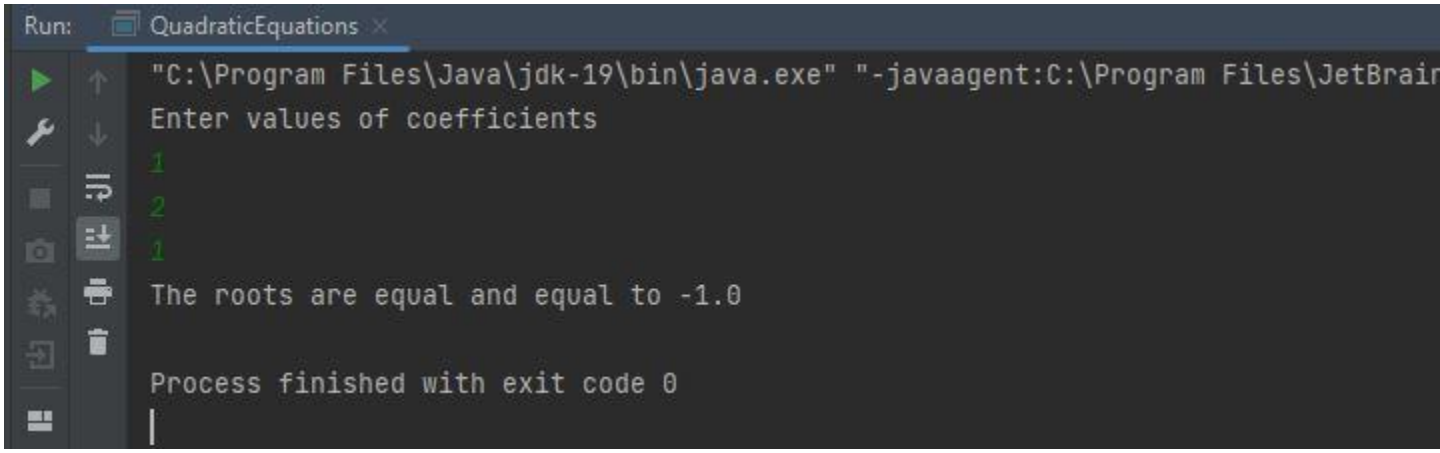
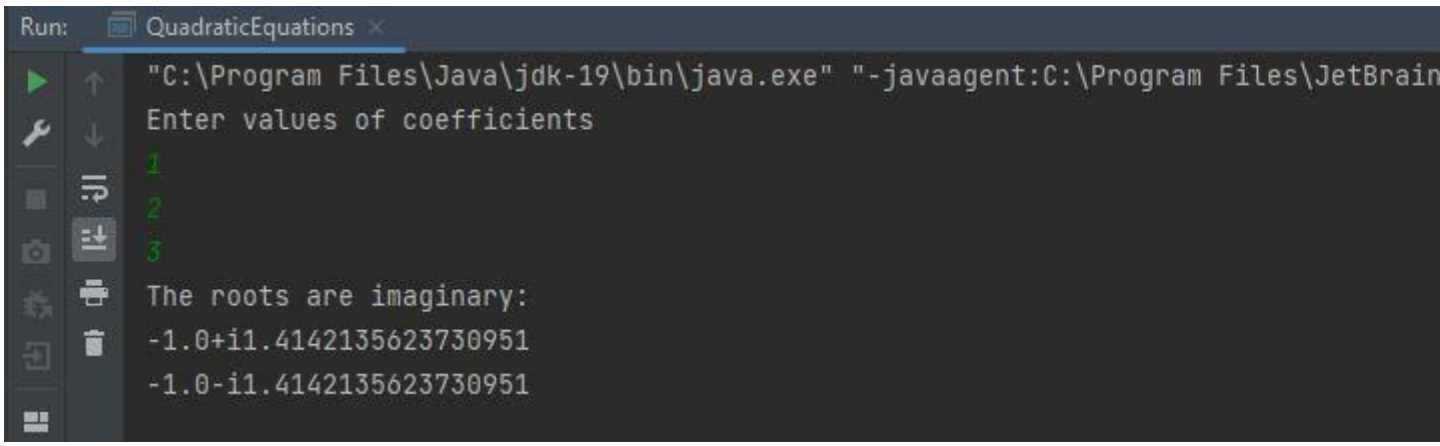
1)DEVELOP A JAVA PROGRAM THAT PRINTS ALL REAL SOLUTIONS TO QUADRATIC EQUATION ax^2 +bx+c=0. SHOW ALL CASES.

```
package com.company;
import java.util.*;



public class QuadraticEquations {
   public static void main(String[] args)
   {
      Scanner sc = new Scanner(System.in);


      double a,b,c,D,r1,r2;
      System.out.println("Enter values of coefficients");
      a = sc.nextDouble();
      b=sc.nextDouble();
      c=sc.nextDouble();


      D=(b*b-4*a*c);


      if(a!=0)
      {
         if(D>0)
         {
```

```
            r1=(-b+Math.sqrt(D))/(2*a);
            r2=(-b-Math.sqrt(D))/(2*a);
            System.out.println("The roots and real and distinct and are equal to:"+" "+r1+"\n"+r2);
        }
        else if(D==0)
        {
            r1 = (-b/(2*a));
            System.out.println("The roots are equal and equal to"+" "+r1);
        }
        else
        {
            r1=(-b/(2*a));
            System.out.println("The roots are imaginary:");
            System.out.println(r1+"+i"+(Math.sqrt(Math.abs(D)))/(2*a));
            System.out.println(r1+"-i"+(Math.sqrt(Math.abs(D)))/(2*a));
        }
    }
  }
}
```


Run:
QuadraticEquations
Enter values of coefficients
1
8
2
The roots and real and distinct and are equal to: -0.25834261322605867
-7.741657386773941
Process finished with exit code 0
Version Control
Run
TODO
Problems
Terminal
Services
Build


Run:
QuadraticEquations
"C:\Program Files\Java\jdk-19\bin\java.exe" "-javaagent:C:\Program Files\JetBrain
Enter values of coefficients
1
2
1
The roots are equal and equal to -1.0
Process finished with exit code 0


Run:
QuadraticEquations
"C:\Program Files\Java\jdk-19\bin\java.exe" "-javaagent:C:\Program Files\JetBrain
Enter values of coefficients
1
2
3
The roots are imaginary:
-1.0+i1.4142135623730951
-1.0-i1.4142135623730951