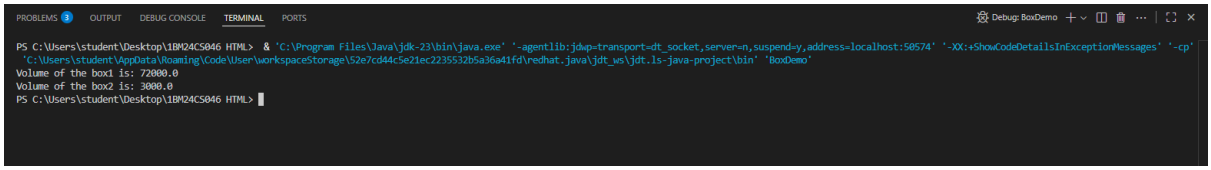
1)

```java
class Box {
    double width;
    double height;
    double depth;


    Box(double w, double h, double d) {
        width = w;
        height = h;
        depth = d;
    }

    double volume() {
        return width * height * depth;
    }
}
public class BoxDemo {
    public static void main(String[] args) {
        Box b1 = new Box(30, 60, 40);
        Box b2 = new Box(10, 20, 15);


        System.out.println("Volume of the box1 is: " + b1.volume());
        System.out.println("Volume of the box2 is: " + b2.volume());
    }

}
```

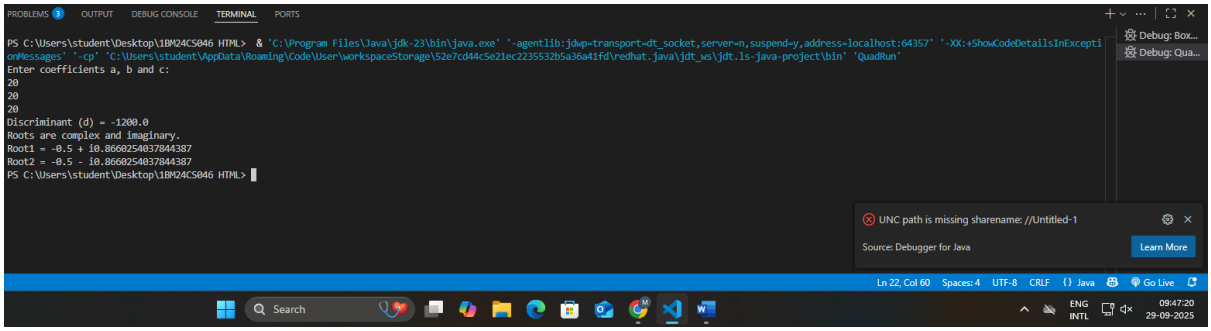
o/p:-



2)

```java
import java.util.Scanner;

class Quad {
```

```
    int a, b, c;
    double root1, root2, real, imag;

    void input() {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter coefficients a, b and c:");
        a = sc.nextInt();
        b = sc.nextInt();
        c = sc.nextInt();
    }

    void calcRoots() {
        double d = (b * b) - (4 * a * c);
        System.out.println("Discriminant (d) = " + d);

        if (d == 0) {
            root1 = root2 = -b / (2.0 * a);
            System.out.println("Roots are real and equal.");
            System.out.println("Root1 = Root2 = " + root1);
        } else if (d > 0) {
            root1 = (-b + Math.sqrt(d)) / (2.0 * a);
            root2 = (-b - Math.sqrt(d)) / (2.0 * a);
            System.out.println("Roots are real and distinct.");
            System.out.println("Root1 = " + root1);
            System.out.println("Root2 = " + root2);
        } else {
            real = -b / (2.0 * a);
            imag = Math.sqrt(-d) / (2.0 * a);
            System.out.println("Roots are complex and imaginary.");
            System.out.println("Root1 = " + real + " + i" + imag);
            System.out.println("Root2 = " + real + " - i" + imag);
        }
    }
}

public class QuadRun {
    public static void main(String[] args) {
        Quad q = new Quad();
        q.input();
        q.calcRoots();
    }
}
```


PROBLEMS 3
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
PS C:\Users\student\Desktop\1BM24CS046 HTML> & 'C:\Program Files\Java\jdk-23\bin\java.exe' '-agentlib:jdwp=transport=dt_socket,server=n,suspend=y,address=localhost:64357' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\student\AppData\Roaming\Code\User\workspaceStorage\52e7cd44c5e21ec2235532b5a36a41fd\redhat.java\jdt_ws\jdt.ls-java-project\bin' 'QuadRun'
Enter coefficients a, b and c:
20
20
20
Discriminant (d) = -1200.0
Roots are complex and imaginary.
Root1 = -0.5 + 10.860254037844387
Root2 = -0.5 - 10.860254037844387
PS C:\Users\student\Desktop\1BM24CS046 HTML>
Debug: Box...
Debug: Qua...
UNC path is missing sharename: //Untitled-1
Source: Debugger for Java
Learn More
Ln 22, Col 60
Spaces: 4
UTF-8
CRLF
Java
Go Live
Search
ENG
INTL
09:47:20
29-09-2025