```
import java.util.Scanner;

class QDT {
   double a;
   double b;
   double c;
   double d; // Discriminant
   double x1;
   double x2;

   void getData() {
      Scanner s = new Scanner(System.in);
      System.out.println("Enter coefficients a, b, and c: ");
      a = s.nextDouble();
      b = s.nextDouble();
      c = s.nextDouble();
      d = b * b - 4 * a * c; // Calculate the discriminant
   }

   void findRoots() {
      if (d > 0) {
         x1 = (-b + Math.sqrt(d)) / (2 * a);
         x2 = (-b - Math.sqrt(d)) / (2 * a);
         System.out.println("Roots are real and distinct: " + x1 + " " + x2);
      } else if (d == 0) {
         x1 = -b / (2 * a);
```

```
        System.out.println("Roots are real and equal: " + x1);
      } else {
        double realPart = -b / (2 * a);
        double imaginaryPart = Math.sqrt(-d) / (2 * a);
        System.out.println("Roots are imaginary: " + realPart + " + " + imaginaryPart + "i and "
+ realPart + " - " + imaginaryPart + "i");
      }
   }
}

class QDTest {
   public static void main(String xx[]) {
      QDT q = new QDT();
      q.getData();
      q.findRoots();
   }
```

}

```
D:\Suhas>javac QDTest.java

D:\Suhas>java QDTest
Enter coefficients a, b, and c:
1
-7
10
Roots are real and distinct: 5.0 2.0

D:\Suhas>java QDTest
Enter coefficients a, b, and c:
4
-4
1
Roots are real and equal: 0.5

D:\Suhas>java QDTest
Enter coefficients a, b, and c:
2
4
5
Roots are imaginary: -1.0 + 1.2247448713915890i and -1.0 - 1.2247448713915890i
```