S.No: 5	Exp. Name: ***Finding roots of quadratic equation***	Date:2025-04-23

Aim:

Write a Python program to find the roots of a quadratic equation by taking the coefficients from the user.

Note: Refer to the displayed test cases for input and output format.

Source Code:

roots.py

```
import cmath
a= float(input("a: "))
b= float(input("b: "))
c= float(input("c: "))
discriminant=b**2-4*a*c
if discriminant >0:
   root1=(-b+cmath.sqrt(discriminant))/(2*a)
   root2=(-b-cmath.sqrt(discriminant))/(2*a)
   print(f"The roots are: {root1.real:.2f} and {root2.real:.2f}")
elif discriminant == 0:
   root=-b/(2*a)
   print(f"The root is: {root:.2f}")
else:
   root1=(-b+cmath.sqrt(discriminant))/(2*a)
   root2=(-b-cmath.sqrt(discriminant))/(2*a)
   real_part1=f"{root1.real:.2f}"
   imag_part1=f"{root1.imag:.2f}"
   real_part2=f"{root2.real:.2f}"
   imag_part2=f"{root2.imag:.2f}"

   if float(real_part1)==0.0:
      real_part1="-0.00"

   print(f"The roots are: {real_part1}+{imag_part1}j and {real_part2}{imag_part2}j")
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
a: 3
b: 33
c: 0
The roots are: 0.00 and -11.00

Test Case - 2
User Output
a: 3
b: 0
c: 1

The roots are: -0.00+0.58j and -0.00-0.58j

Test Case - 3
User Output
a: 1
b: 2
c: 1
The root is: -1.00