Experiment 2.1.1

Roots of an experiment

Algorithm : Step 1 : Start.
Step 2 : Read three space-separated integers a, b, and c.
Step 3 : Calculate the discriminant.
D=b*b -4*a*c
Step 4 : Check the value of the discriminant .

- Case1: If D > 0 (Real and different roots)
  Print: root1,root2.
- Case 2: If D == 0 (Real and same roots)
  Print : root1=root2.
- Case 3: If D < 0 (Imaginary roots)
  Print : Root = root 1 + imaginary
  Root = root 2 + imaginary Step 5 :
  Stop.

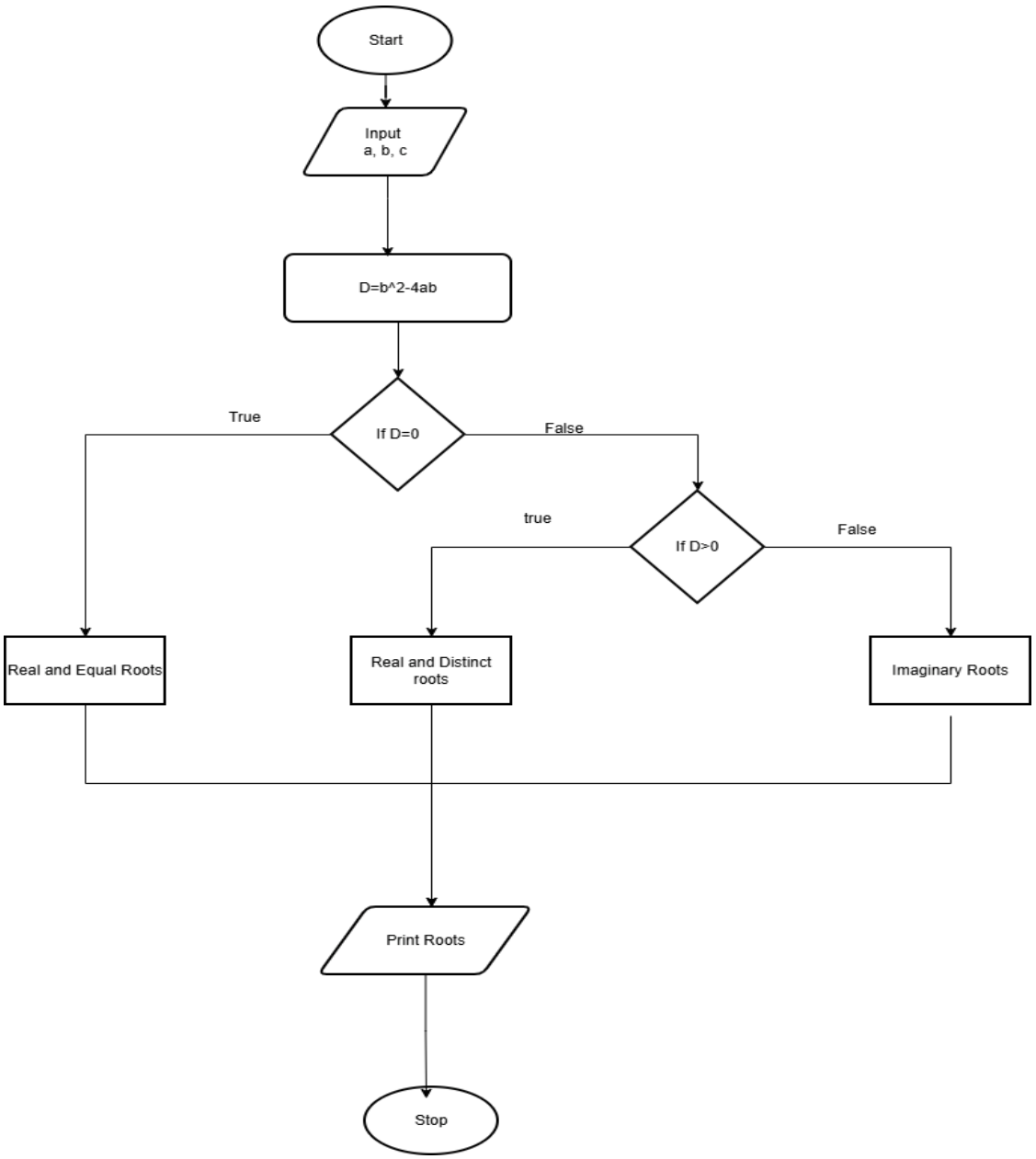
Code:

```
a, b, c = map(float, input().split())


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

= D ** 0.5


if D > 0:

    root1 = (-b + sqrD) / (2*a)

root2 = (-b - sqrD) / (2*a)

print("root1 = " f"{root1:.2f}")

print("root2 = " f"{root2:.2f}") elif D

== 0:
```

```
    root1 = root2 = -b / (2*a)
print("root1 = root2 = " f"{root1:.2f}")


else:
    real = (-b) / (2*a)     imaginary = sqrD /
(2*a)     print(f"root1 =
{real:.2f}+{imaginary:.2f}i")     print(f"root2 =
{real:.2f}-{imaginary:.2f}i")
```

FlowChart:

S


Start
Input
a, b, c
D=b^2-4ab
If D=0
True
False
If D>0
true
False
Real and Equal Roots
Real and Distinct
roots
Imaginary Roots
Print Roots
Stop