Program1: #include

#include<cmath>

using namespace std;

int main()

{

float a, b, c, x1, x2, discriminant, realPart, imaginaryPart;

cout << "Enter coefficients a, b and c: ";

cin >> a >> b >> c;

discriminant = b\*b - 4\*a\*c;

if (discriminant > 0)

{

x1 = (-b + sqrt(discriminant)) / (2\*a);

x2 = (-b - sqrt(discriminant)) / (2\*a);

cout << "Roots are real and different." << endl;

cout << "x1 = " << x1 << endl;

cout << "x2 = " << x2 << endl;

}

else if (discriminant == 0)

{

cout << "Roots are real and same." << endl; x1 = (-b + sqrt(discriminant)) / (2\*a);

cout << "x1 = x2 =" << x1 << endl;

}

else { realPart = -b/(2\*a);

imaginaryPart =sqrt(-discriminant)/(2\*a);

cout << "Roots are complex and different." << endl;

cout << "x1 = " << realPart << "+" << imaginaryPart << "i" << endl;

cout << "x2 = " << realPart << "-" << imaginaryPart << "i" << endl;

}

return 0;

}