Exercise 1: Construct a c++ program for finding quadratic equation using if and else condition.

Source code:

```
#include <iostream>
#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/(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;
}
```

OUTPUT:

Enter coefficients a, b and c: 1 3 3

Roots are complex and different.

x1 = -1.5+0.866025i

x2 = -1.5-0.866025i