```cpp
//File: HW02.cpp
//Name: Duncan, McFarlane
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//Compiler used: MS Visual Studio 2017
//Purposes: To find the roots of a quadratic equation

#include <iostream>
#include <cmath>
using namespace std;

int main()
{
        double a_val = 0.0;
        double b_val = 0.0;
        double c_val = 0.0;
        double r1 = 0.0;
        double r2 = 0.0;
        double discriminant = 0.0;
        double sqrt_discriminant = 0.0;

        cout << "Enter a, b, c: ";
        cin >> a_val >> b_val >> c_val;

        discriminant = pow(b_val, 2) - 4 * (a_val*c_val);
        sqrt_discriminant = pow(discriminant, .5);
        r1 = (-b_val + sqrt_discriminant) / (2 * a_val);
        r2 = (-b_val - sqrt_discriminant) / (2 * a_val);

        if (discriminant == 0)
                cout << "The root is " << r1;
        else if (discriminant > 0)
                cout << "The roots are " << r1 <<" and " << r2;
        else
                cout << "The equation has no real roots";

        return 0;
}
```

```
Enter a, b, c: 1.0 3 1
The roots are -0.381966 and -2.61803
```

```
Enter a, b, c: 1 2.0 1
The root is -1
```

```
Enter a, b, c: 1 2 3
The equation has no real roots
```