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// Program #1 - Quadratic formula for real solutions
#include <iostream>
#include <cmath>
using namespace std;
double sgn( double x )
{
    double sign = 1.0;
    if ( x < 0.0 )
        sign = -1.0;
    return( sign );
}
int main()
{
    double a, b, c, disc, q, x1, x2, tmp;
    cout << "Quadratic Formula\n";</pre>
    cout << "To find the real solutions of ax^2+bx+c=0\n\n";
    cout << "Enter a, b, & c";
cout << "\na = ";</pre>
    cin >> a;
cout << "b = ";
    cin >> b;
cout << "c = ";</pre>
    cin >> c;
    cout << endl;</pre>
    if ( a == 0.0 ) {
        disc = b * b - 4.0 * a * c;
    if (disc < 0)
        cout << "There are no real solutions.";</pre>
    else {
        q = -0.5 * ( b + sgn( b ) * sqrt( disc ) );
        x1 = q / a;
x2 = c / q;
if ( x2 < x1 ) {
             tmp = x2;
             x^{2} = x^{1};
             x1 = tmp;
         }
        cout << "The solutions are:\n";
cout << "x = " << x1 << " or x = " << x2;</pre>
    }
    cout << "\n\n"; system( "PAUSE" );</pre>
    return( 0 );
}
```