1. Calculator

Write a simple calculator that should be able to evaluate simple expressions consisting of a number, an operator, and a number. Each number is an element of the set of real numbers (R). Each operator is an element of + , − , * , /.

The program should read and evaluate expressions until a character that is not a number is entered as a first value. If the first character is a real number, you can assume the expression is valid.

An example of the program is shown below:

Enter the expression: 2 + 3

2 + 3 = 5

*Enter the expression: 2.3 * 4*

*2.3 * 4 = 9.2*

Enter the expression: q

2. Quadratic Formula

Write a program that solves a quadratic equation using the quadratic formula. The general quadratic equation is:

$$ax^2 + bx + c = 0$$

The program should ask the user to enter values for *a, b,* and *c*. Next, it should calculate and print the solution to the standard output.

Error checking: (This can be omitted if you think it's too early for now.)

1. Check the user input. If the input does not match three floating-point numbers, output an error message and do not start the calculation.
2. Check whether a==0.

Your program should ask for values like that:

Please enter the values of a, b, and c respectively:

Depending on the discriminant, one of the following three results shall be printed:

There are 2 solutions.

The solutions are: <first_solution> and <second_solution>

There is 1 solution.

The solution is: <solution>

There is no solution.