

2.4 Quadratic Formula (Graded Assignment)

Due 16 Sep 2019 by 23:59 **Points** 10 **Submitting** an external tool

Write a program that solves a [quadratic equation](https://en.wikipedia.org/wiki/Quadratic_equation) (https://en.wikipedia.org/wiki/Quadratic_equation) using the [quadratic formula](https://en.wikipedia.org/wiki/Quadratic_formula) (https://en.wikipedia.org/wiki/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(s) to the standard output. You can assume $a \neq 0$.

Your program should ask for values like that:

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

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.

Your program should use user-defined functions, one for computing the discriminant, and one for computing the quadratic formula itself. You have seen math functions in section 2.10 of the zyBook. Your two functions can be considered pretty much like two, very specific, math functions. Chapter 9 of the zyBook goes into a lot of detail about user-defined functions. We don't need this level of detail here. Just take the following function as an example how to write a simple "math style" function yourself:

```
double max (double a, double b){  
    double result = a;  
    if ( b > a ) result = b;  
    return result;  
}
```

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