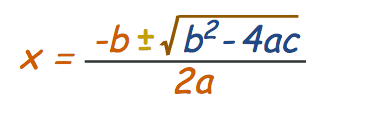
CS1300 Programing Project 1 Fall 2019

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Design, test your design, and implement (and test again) a C++ program that will take in from the user the coefficient of x^2 – a; and the coefficient of x – b and c and outputs the type of roots of the equation. If b^2 – 4ac ≥. the program should output the roots of the quadratic equation. Use the cmath library for the power function.

The roots of the quadratic equation ax^2 + bx + c = 0; a ≠ 0 are given by the following formula:



In this formula, the term b^2 - 4ac is called the discriminant. If b^2 – 4ac = 0, the equation has a single repeated root. If b^2 – 4ac > 0, the equation has two real roots. If b^2 – 4ac < 0, the equation has two complex roots.

Output should look like:

Values of a, b, c Type of roots of equation Roots of Equation (or NA)

a = 5; b = 6; c = 1 real x = -0.2 or x = -1

Answers need to be lined up in columns.

**Due Date:** Wednesday October 2, 2019

**Turn in:**

1. All required documentation to the submission area under assignments.

All your documents MUST BE ONE PDF FILE.

• Cover Page – name, program #, due date, course number and section

• Copy of assignment

• Design document(s) – algorithm, should be in depth

• Program source code

• Copy of output

• Reflection

1. Your file must be tarred and gzipped and copied to /Users/cs1300.drop on bullwinkle.

* File name must be username.prog1.tar.gz
* No capital letters
* No tiny peens
* To make this work you will need to have a folder called username.prog1 that contains all of your files. You will tar the entire folder, which will untar to yourname.prog1

Recommended steps:

Print cover page

Print extra copy of assignment

Write algorithm

Desk check algorithm using given data

Write reflection on algorithm development

Write code

Develop code template

Include in code template:

Beginning comment section for program information, name, date, program objectives

Main and return

Open/close main function

Save code template for reuse

Write comments within code to reflect algorithm

Code per comments

Revise code/algorithm/reflection as needed

Compile code

Revise code/algorithm/reflection as needed

Execute code

Revise code/algorithm/reflection as needed

Save output from final version of code