* Lab due on the due date specified in Canvas.
* Purpose: To practice assignment statement by implementing the quadratic formula.
  + Students know this formula from math classes.

Requirements

1. Create a java file in the determined Java IDE.
   1. Name the class **“Week3\_QuadraticFormula”**.
   2. Make sure you spell it exactly as it is written.
2. Ask user to input 3 real numbers. Name the variables a, b, c.
   1. They are not the best variables names but are appropriate for this formula.
   2. Allow to input real #s.
3. Use these 3 variables for to calculate the quadratic formula.
   1. If you don’t know the formula, look it up.
   2. Remember about “Order of Operations”.
4. The quadratic equation produces 2 answers. You will need 2 formulas.
5. Print out the 3 inputs values along with the result.
   1. Do this for both +/- equations.
6. Optional requirements.
   1. The quadratic equation can produce invalid results:
      1. Divide by zero if denominator = 0.0.
      2. Imaginary number if 4ac > b2.
   2. Test to see if either of conditions occur. If so, do not continue and print an error message describing he problem.

Deliverables

1. Student will upload the Java file to the appropriate Canvas assignment.
2. I want just the Java file. I will cop and paste the file into my Java IDE and test your program.

Test Data

1. Use this test data to verify your java program works correctly.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **A** | **B** | **C** | **Subtraction formula** | **Addition formula** |
| 3 | 10 | 3 | -0.33333 | -3.0 |
| 0 | 10 | 3 | Error: div, by 0 | Error: div. by 0 |
| 2 | 10 | 0 | 0.0 | -5.0 |
| 2 | -10 | 0 | 5.0 | 0 |
| 0.05 | -20 | 4.2 | 399.7899 | 0.2101 |