CS101: Lab #15
Exceptions Part II

In this lab, you will construct a class called `QuadraticSolver` that will compute the real roots of a quadratic function ($f(x) = ax^2 + bx + c$).

The class will implement the following methods.

- A default constructor that initializes a legitimate quadratic function.
- An overloaded constructor that takes the values of `a`, `b`, and `c` in the function $f(x) = ax^2 + bx + c$. This method throws a `QuadraticException` in the case where the input does not define a quadratic function.
- A method that computes the discriminant ($b^2 - 4ac$).
- Boolean methods determining whether the solutions of the quadratic equation $ax^2 + bx + c = 0$ have real or non-real solutions.
- Two methods, one for each real root of the equation $ax^2 + bx + c = 0$. Each method will throw a NonRealException when the root is a non-real value.
- A `toString` method that (reasonably) prints the quadratic function.

The classes `QuadraticException` and `NonRealException` have been provided. Implement a main method in a separate class to test your implementation.