Quadratic Class Specification

A Quadratic is a second order polynomial equation specified as :

$$f(x) = y = ax^2 + bx + c$$

The roots of a quadratic equation are given by the quadratic formula:

$$x_1, x_2 = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Your Quadratic class must be able to model any general second order polynomial equation.

The user should be able to invoke a default constructor or one where each coefficient can be specified.

Users of the class should be able to view or alter any of the coefficients and should be able to print a Quadratic.

In addition the class must be able to:

* tell you if there are real roots or complex roots,

*determine whether the discriminant is negative, and

*be able to compute the value of the first derivative of the quadratic at any specific point.

*It should also be able to compute any real roots to the equation.

Extra credit will be given for handling the case where the roots are complex and for providing a GUI interface that allows graphing of the plot of the equation.