Up to this point we have assumed that our users will always enter appropriate data and that our programs would run without error as a result. Now it’s time to come to reality. Things over which we have little control can break our programs. Our job as programmers is to anticipate and prevent program crashes before they happen.

In [elementary algebra](https://en.wikipedia.org/wiki/Elementary_algebra), the quadratic formula is the solution of the [quadratic equation](https://en.wikipedia.org/wiki/Quadratic_equation). There are other ways to solve the quadratic equation instead of using the quadratic formula, such as [factoring](https://en.wikipedia.org/wiki/Factorization), [completing the square](https://en.wikipedia.org/wiki/Completing_the_square), or [graphing](https://en.wikipedia.org/wiki/Graph_of_a_function). Using the quadratic formula is often the most convenient way.

The general quadratic equation is

And the solutions (roots) come from the quadratic formula:

Write a program to calculate the roots of a quadratic equation by using the quadratic formula. Be sure to use what you have learned about exceptions to catch any errors that might occur in the program. Be specific in your messages to the users. Make sure to offer them another opportunity to fix the data they enter.

The project will be graded on how well it implements the solution, quality of the code and the program’s ability to catch errors. Hint: Use the chart of Python exceptions and try to force your program to throw an error…*because that’s what I’m going to do!!!*