

## Extra Credit #3

**Due:** February 6, 2012

**Points:** 30

For this homework, please put refinements for all your programs into one file called “refinements.txt” or “refinements.pdf”, and error journal entries for all your programs into one file called “errors.txt” or “errors.pdf”.

Submit this program in the Extra Credit 3 area of SmartSite—*not* in the Homework 3 area.

**Extra Credit:** (30 points) Recall the formula for the solutions to a quadratic equation  $y = ax^2 + bx + c$  is:

$$x_1 = \frac{-b + \sqrt{b^2 - 4ac}}{2a}$$

and

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

Write a program that reads in  $a$ ,  $b$ , and  $c$ , checks that they are numbers, checks that  $b^2 - 4ac$  is non-negative, and then computes the two roots. If any of the inputs are not numbers, or  $b^2 - 4ac$  is negative, report an error and stop.