

# AMS595 Homework 2, Fall 2011

## Problems

1. Write a program to ask the user to input a positive integer  $n$  from screen, then output the first  $n$  prime numbers to a file named *prime\_num.dat*, with 10 numbers per line in the output, except the last line.
2. Write a program to ask the user to input a non-negative real number  $x$  from screen, and calculate the principal square root of  $x$  only by operators  $+ - * /$ , then output the result to the screen. Of course, you are not allowed to use the library function *sqrt*.  
(These two methods may help: Newton's Method or Bisection Method)

## Requirements:

1. Write a *makefile* that can compile the two programs separately with different *make* parameters.
2. In the second problem, write a function in the prototype of `double square_root(double *x)` to calculate the square root in your program.
3. You can discuss the homework with other people but you should write your own homework.
4. Make a tar file and send it to **howei@ams.sunysb.edu** as an attachment.
5. Due date: 12pm, Nov. 17, 2011, Thursday. No late submission accepted.