Assignment Set 5  
Due April 24th

5.1 Exercise 2.9 from *Computational Physics*. Use the isothermal model for the air density (eq. 2.23) and the values for the various constants that are given in the text. Calculate the trajectories for a grid of firing angles from 10 to 80 degrees with 5-degree spacing and identify the angle that gives the maximum range. Create trajectory plots of $Y$ vs. $X$ for all firing angles (all curves on the same plot). Why is this maximum-range angle larger than the one for constant-density air resistance (see pg. 28)?
Format Requirements for Assignments

For every code you write – no matter how small – as a class assignment:

- Include a multiple-line comment at the top with the following information:
  - The name of the assignment
  - Your name
  - The date you turned in the code

- Insert comments throughout the code: just before every main code element, like a function, a conditional statement, a loop, a set of variable assignments, or print statements etc.

- Turn in a print-out of the code along with print-outs of all possible program outputs both in data and graph form, whenever applicable. Also turn in your answers asked as part of the assignments.

- E-mail me all the source-code files. In the subject line remember to include (i) your name, (ii) the name or number of the exercise.