AAE 490F/AT490F
Homework 1
Due Wednesday January 27, 2010

To do this homework you should use MATLAB and use the function atmosphere4.m that can be found on the course web site

http://cobweb.ecn.purdue.edu/~andrisan/Courses/AAE490A_S2010/AAE490A_S2010.html

1. Write a MATLAB script to plot the difference between geometric altitude and geopotential altitude versus geopotential altitude over the geopotential altitude range from 0 to 65,000 ft.

2. Write a MATLAB script to plot atmospheric temperature versus geopotential altitude over the geopotential altitude range from 0 to 65,000 ft.

3. Write a MATLAB script to plot atmospheric pressure versus geometric altitude over the geometric altitude range from 0 to 65,000 ft.

Be sure to label the axes of all plots. Always have Matlab put your name somewhere on your plots.

4. Assume that a correctly calibrated altimeter is set to 29.92 inches of mercury in the Kohlsman window. Assume that the altimeter indicates a pressure altitude of 7000 feet. Assume that a corrected temperature gage reads 497degR. What is the density of the air?

Read Chapter 1, 2, and 3 of Kimberlin.

Course Web Site

http://cobweb.ecn.purdue.edu/~andrisan/Courses/AAE490A_S2010/AAE490A_S2010.html

Site where I will put many files useful in this course.

http://cobweb.ecn.purdue.edu/~andrisan/Courses/AAE490A_S2010/AAE490A_S2010.html/Buffer