2.61 Internal Combustion Engines
Spring 2008

Homework Set #2

Due: 2/26/08

Problems:

5.3   Assume that c_v=900 J/kg. Also calculate the ratio of the imep of the turbo-charged engine to that of the naturally aspirated engine. (This is a rather long problem, but straight forward. It is a good exercise in doing cycle analysis.)

3.1   Also calculate the power output, assume fuel conversion efficiency is 0.3.

3.3   Exercise in exhaust gas analysis.

3.13 This problem gives you some feel for what comes out in the exhaust pipe. The reason for doing the "dry" versus "wet" analysis is because water vapor is usually removed from the exhaust gas before the CO and CO2 measurements (to prevent condensation on the instruments). Use Matlab or a spread sheet to calculate the numbers.