Homework III: AE302, High-speed Aerodynamics

Feb. 13 2007
Due: Feb. 20, 2008(beginning of class)

Problem 1

Problem 8.3. (Answer SI units!)

Problem 8.5. Also determine p^*, T^* and M^* in the test section.

Problem 2

Show that the maximum velocity obtained from an ideal gas flow from a reservoir is

$$u_{max} = 2h_t = \frac{2}{\gamma - 1} a_t^2$$

Explain why this is the maximum velocity.