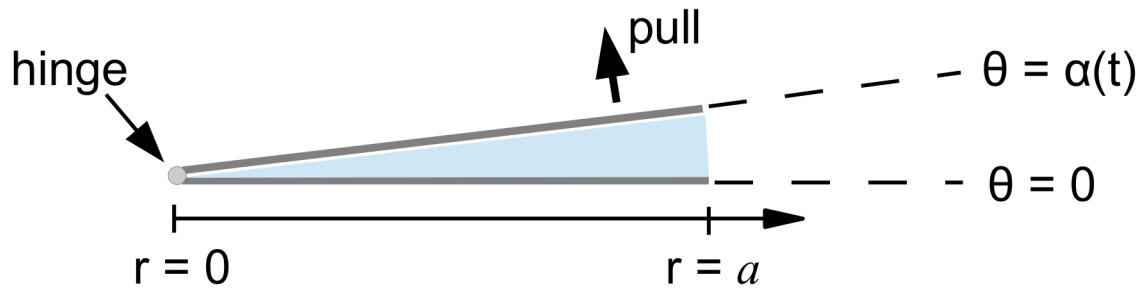# MAE571, Fall 2014   Homework #6

Due Wednesday, December 3, at the start of class. Since the answers and/or hints for all problems in this assignment have been provided in the textbook, credit will be given only when your work shows the correct procedure.

Prob. 1 (25%)
Complete the exercise in Prob. 7.9 in the textbook. The following diagram illustrates the set up of the system.



Prob 2
(a) Complete the exercise in Prob. 8.4 in the textbook. (15%)
(b) Obtain the solution for the v-velocity of that problem. Given $M/\rho = 1$ and $\nu = 0.01$, plot the profiles of the u-velocity and v-velocity as a function of $y$ across the jet core, in the same fashion as Fig. 8.16, at $x = 1$ and 3. (15%)

Prob 3 (20%)
Complete the exercise in Prob. 2.6 in the textbook.

Prob 4 (25%)
Complete the exercise in Prob. 2.14 in the textbook. You do not need to solve the differential equation for $f(\eta)$ but need to show how it is derived.