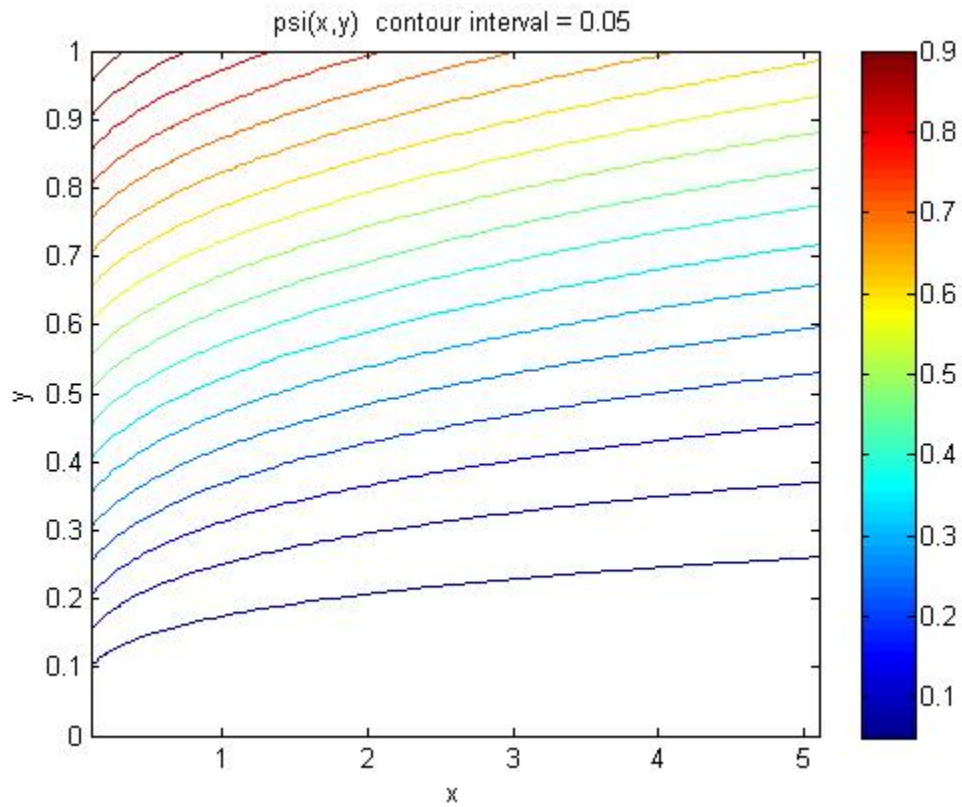MAE571, Fall 2014, HW4 reference solutions

(a) See Fig. 8.8 in the textbook.

We use the setting of $v = 0.01$ and $U = 1$ for Part (b)-(e)
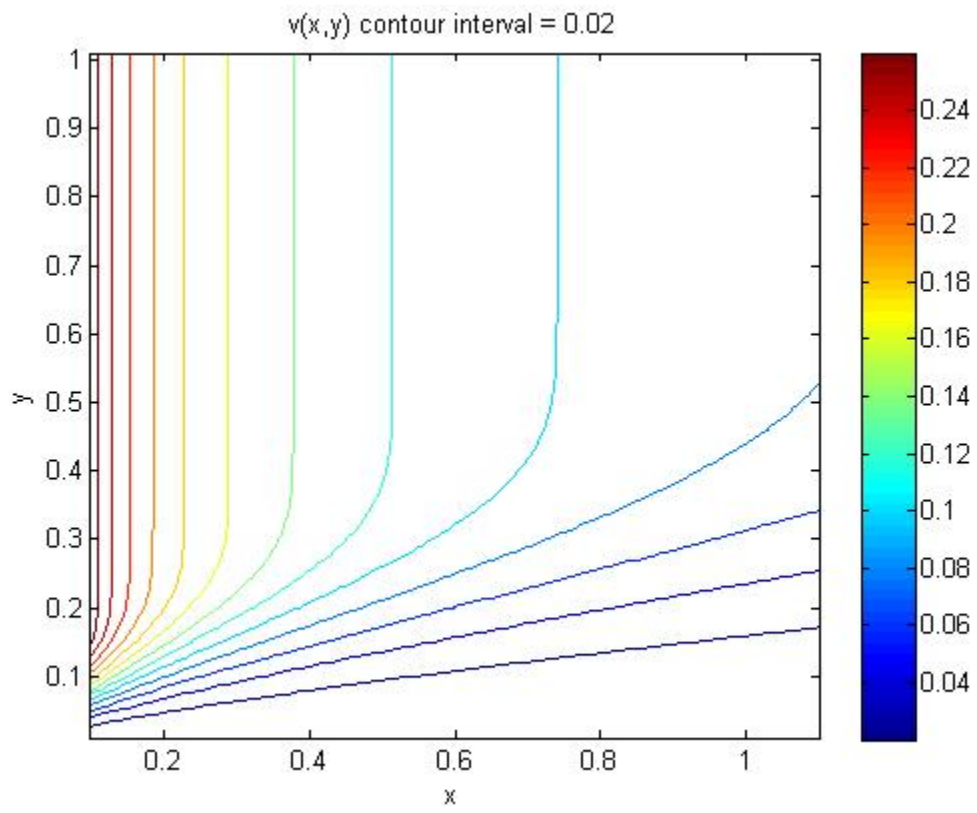
(b)

Contour plot of streamfunction psi

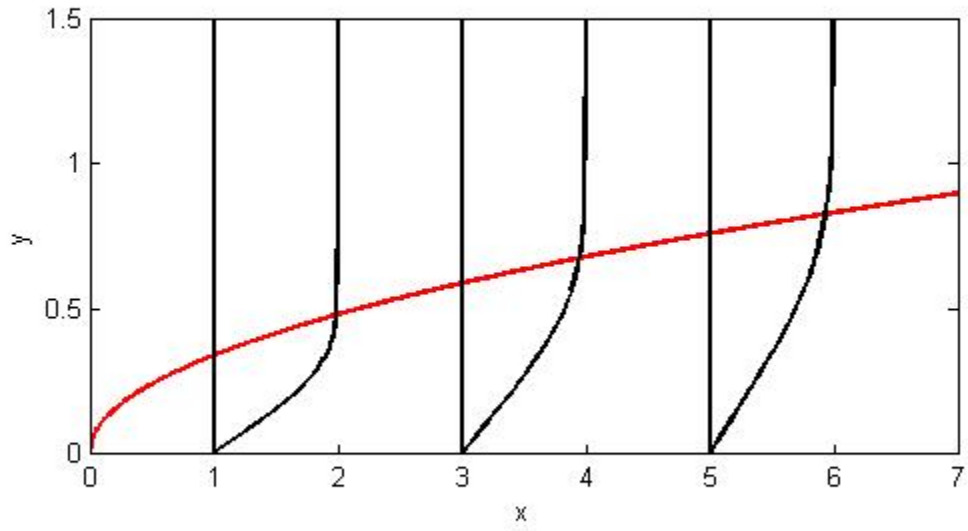

psi(x,y) contour interval = 0.05

(b)

Contour plot of v-velocity

v(x,y) contour interval = 0.02

(c) & (d)

Red line is boundary layer thickness; Black lines are the profiles of u(y) at x = 1, 3, and 5.

(e)