Home Work Problem 14

A physical flow domain shown in figure is to be transformed into a rectangular computational domain. The numerical values of the y-coordinates of the upper wall is given in the table below. Determine the values of $\xi_x, \xi_y, \eta_x, \eta_y$ at the point $\xi = 2, \eta = 0.75$. Point f corresponds to x = 0 and Point g corresponds to x = 4.

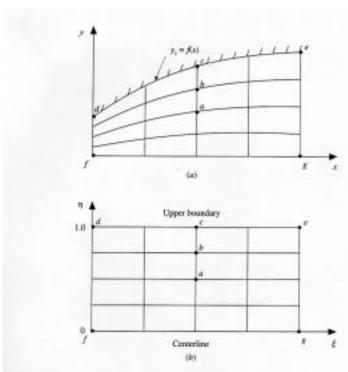| x	y
0	1.000
1	1.438
2	1.750
3	1.938
4	2.000

FIG. 5.6
A simple boundary-fitted coordinate system. (a) Physical plane; (b) computational plane.