

Computational Fluid Dynamics (AE/ME 339)
MAE Dept.

Home Work Problem

For the nozzle shown in the figure use the following transformation to map it into a rectangular domain. The nozzle wall is represented by $y_{\max} = x^2$ for $1 \leq x \leq 2$.

$$\xi = x, \eta = \frac{y}{y_{\max}}$$

1. Determine numerical values of ξ_x , ξ_y , η_x , η_y at the point $\xi = 1.5$, $\eta = 0.5$,
 - i) analytically
 - ii) numerically using central differencing.
2. Calculate the Jacobian at the point in (1).



