

Problem 9.7

Given: Linear, parabolic, and sinusoidal velocity profiles for laminar boundary layers.

Linear $\frac{u}{U} = \frac{y}{\delta}$

Parabolic $\frac{u}{U} = 2\left(\frac{y}{\delta}\right) - \left(\frac{y}{\delta}\right)^2$ Sinusoidal $\frac{u}{U} = \sin \frac{\pi}{2}\left(\frac{y}{\delta}\right)$

Find: Compare shapes by plotting $\frac{y}{\delta}$ vs. $\frac{u}{U}$.

Solution:

