9.14

9.14 If the upstream velocity of the flow in Problem 9.13 is $U = 1.5$ m/s, determine the kinematic viscosity of the fluid.

For laminar flow $\delta = 5\sqrt{\frac{\nu x}{U}}$, or $\nu = \frac{U\delta^2}{25x}$

Thus,

$$\nu = \frac{(1.5\,\frac{m}{s})(12\times10^{-3}\,m)^2}{25\,(1.3\,m)} = \underline{\underline{6.65\times10^{-6}\,\frac{m^2}{s}}}$$