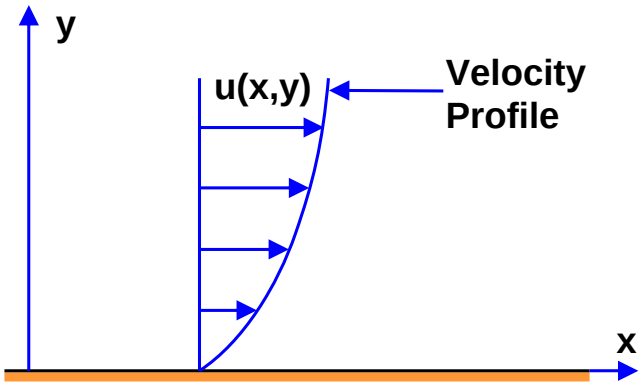
Problem 115G

The velocity, u, in the x direction for a planar incompressible shear flow near a wall as shown in the following sketch,



is given by the expression

$$u = U\left\{\frac{2y}{ax} - \frac{y^2}{a^2x^2}\right\}$$

where a is a constant. Find the corresponding expression for the velocity, v, assuming that $v = 0$ at the wall, $y = 0$.