

F10.

a) Determine the streamline shapes of the following 2-D velocity field (closely related to HW problem F6).

$$u = -y \qquad v = x$$

b) Evaluate Du/Dt and Dv/Dt , and determine the pressure gradient ∇p . Assume the density ρ is constant (low speed flow).

c) Using your result from b), determine the pressure field $p(x, y)$ to within an additive constant.