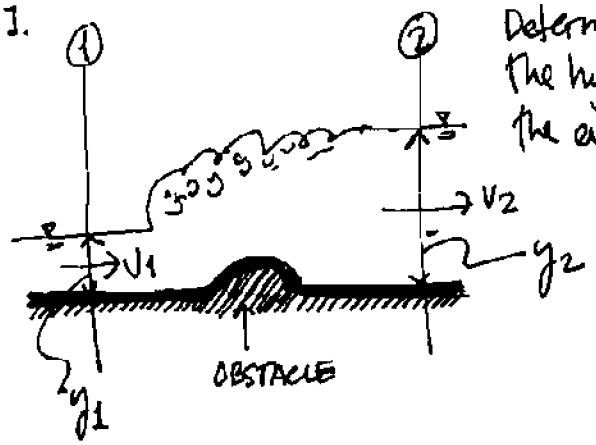
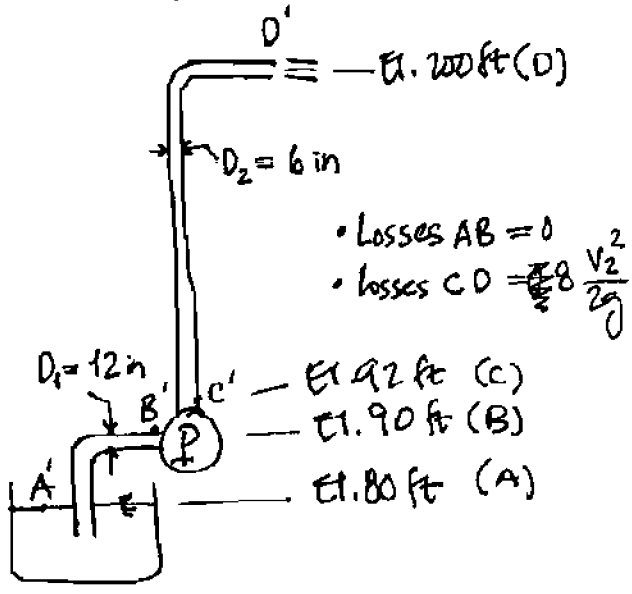
CEE 3500 – TEST 2 SAMPLE 4 – FALL 2005

[1].

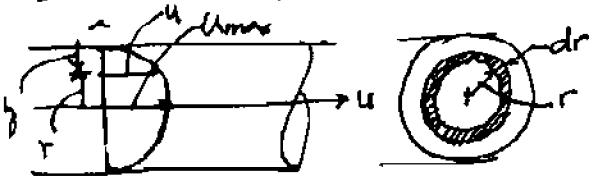


Determine the force on the obstacle that triggers the hydraulic jump illustrated in the figure if the energy loss in the jump is 2 ft of head. also given $y_1 = 3$ ft, $y_2 = 5$ ft. WIDTH $B = 1$ ft

[2]. The pump in the figure delivers a head of 140.6 ft to the water flowing at D into the atmosphere. If the pressure at point B, upstream of the pump, is −2.0 psi, and a gage at point C is located at elevation 92 ft. Determine the pressure at the discharge gage C.



[3]. Flow in a pipe has a ~~[illegible]~~ distribution ~~[illegible]~~ given by

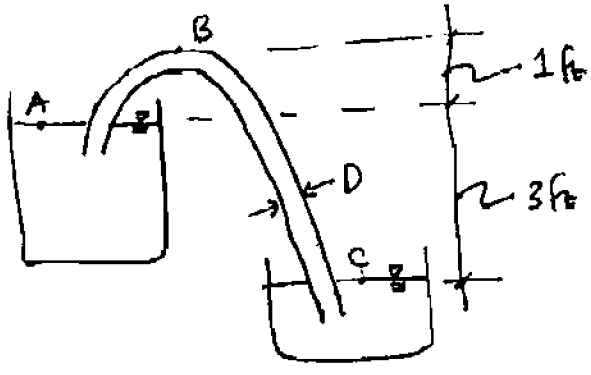


$\frac{u}{u_{max}} = \left(\frac{y}{r_0}\right)^K$, K = constant

determine the kinetic energy correction factor.

[4]. & [5].

[4]. Sketch the EL & HGL for the system shown.



[5]. In the figure D = 0.5 ft,
losses AB = $1.2(V^2/2g)$
losses BC = $0.8(V^2/2g)$
Determine the pressure at point B.