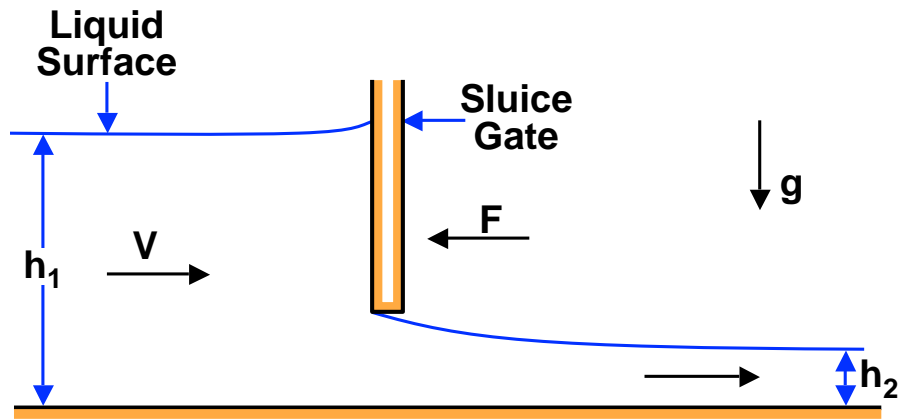


Problem 220A

An incompressible, inviscid liquid flow (density, ρ) of depth, h_1 , and velocity, V , flows under the action of gravity through a sluice gate:



The depth downstream of the sluice gate is denoted by h_2 . Determine the force per unit width (normal to sketch), F , necessary to hold the plate in place in terms of ρ , g , h_1 and h_2 .