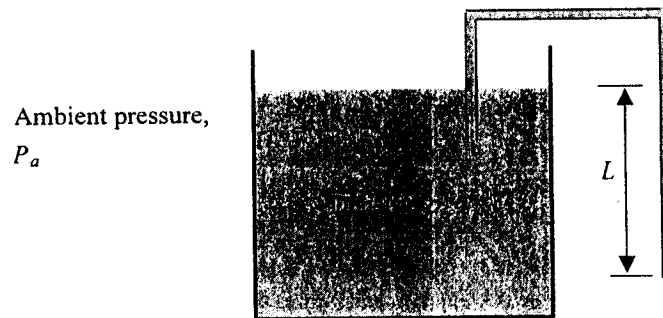


3. A tube with one end immersed in the liquid contained in a large open tank and the other end open to the ambient, as shown in the attached figure, is used to drain liquid from the tank. If all friction losses are neglected, and the flow is steady, find the speed of the jet issuing from the open end of the tube. (10%)



4. Air of constant density ρ_a flows steadily through a circular pipe of diameter D , which is downstream of a frictionless nozzle of diameter d as shown in the attached figure. Assume one-dimensional flow. If the manometer reads a deflection of h , find the velocity V at the nozzle exit in terms of h , D , d , ρ_a , and the density of the manometer fluid ρ_m . (10%)

