

### CHEN.3030 Fluid Mechanics

#### Short Quiz: Buoyancy and Pressure Distribution in Static Fluids

A 1 ft diameter, 2 ft long cylinder floats in an open tank containing an unknown liquid with specific weight  $\gamma_f$ . A U-tube manometer is connected to this tank as shown. When the pressure in pipe A is 0.1 psi below atmospheric pressure, the various fluid levels are as shown. With this information, determine the weight in lbf of the cylinder. Use  $\gamma_w = 62.4 \text{ lbf/ft}^3$ .

