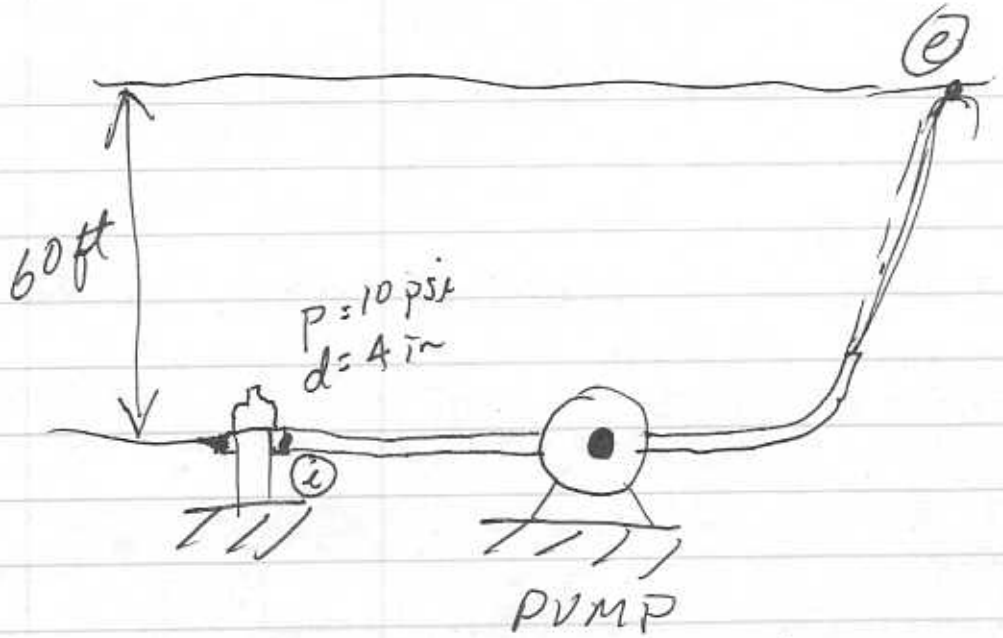


MYO 5.107



$$\dot{V} = 1.5 \text{ ft}^3/\text{s}$$

$$h_2 = 0$$

$$\dot{W} = ?$$

$$\frac{P_1}{\rho g} + \frac{V_1^2}{2g} + z_1 = \frac{P_2}{\rho g} + \frac{V_2^2}{2g} + z_2 + h_s - h_L$$

$$60 \text{ ft} = \frac{(10)(144) \text{ psf}}{\rho g} + \frac{V_1^2}{2g} + h_s$$

$$V_1 = \frac{\dot{V}}{A_1} = \frac{1.5 \text{ ft}^3/\text{s}}{\left(\frac{\pi \left(\frac{4}{12}\right)^2}{4}\right)} = 17.2 \text{ ft/s}$$

$$\rightarrow h_s = 32.4 \text{ ft}$$

$$h_s = \frac{\dot{W}}{\rho g}$$

$$\dot{W} = h_s \dot{V} \rho g$$

$$\dot{W} = 3036 \frac{\text{ft} \cdot \text{lb}}{\text{s}}$$

$$\dot{W} = 5.5 \text{ hp}$$