2. Purpose? Find air pressure the flow of ethyl alcohol stops in the system

Source? Test (Prof)

Picture? Same as before

Solution?

$P_6 = P + E_L g(h_1 - h_2)$

$P_6 = 40 + 250(9.81)(38 - 18)$

$P_6 = 486.2$ kpa

2B) purpose? what will be the new manometer reading the moment of no flow?

Picture? Same as before

Picture? Same as before

Solution?

$pgh = pgh\,K$

$40(9.81)(42) = 486.2(9.81)(K)$

$16480.8 = 4769.6224K$

$K = 3.46$ ft

3) Purpose? make several flow rates on the right tank

Source? Test Prof

Picture? Same as before

Syncere Bullin

2/7/24

1st Test Submission

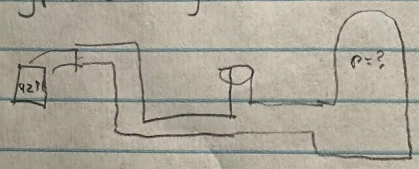
1. Temp = 77°F air pressure? → 250 gpm of ethyl alcohol

Length of Pipe = 36 ft P = 40 psig (Data/variable)

Purpose = Finding the required air pressure in the tank on the right to deliver 250 gpm of ethyl alcohol.

Source: Test (proof)

Drawing:



Solution:

- $\frac{v_2^2}{2g} + \frac{P_2}{\gamma} + Z_2 = \frac{v_1^2}{2g} + \frac{P_1}{\gamma} + Z_1$

- $P_B = P_a + \frac{\gamma}{2g}(v_A^2 + v_B^2) + \gamma(Z_a - Z_B)$

$$250 + \frac{P_2}{36} + 42 = \frac{42}{2(9.81)} + 40$$

$$P_2 = \frac{250(42) + 40}{36(2)(9.81)} = \boxed{15.0 \text{ kpa}}$$

Purpose:

1B. Manometer reading Source: Test (proof)

Drawing = Same as before

Solution: 46 - 38 = $\boxed{8 \text{ ft}}$