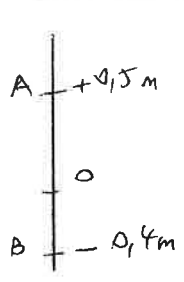


\* QCM 14, BD



$$P_A + \rho g h_A = P_B + \rho g h_B$$

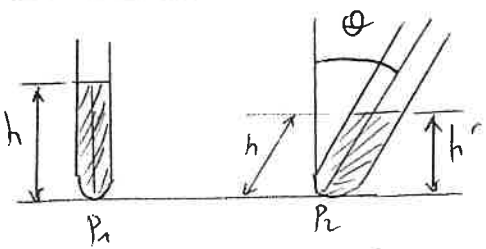
$$\Delta P = P_B - P_A = \rho g h_A - \rho g h_B$$

$$= \rho g (h_A - h_B)$$

$$= 10^3 \cdot 9,81 \cdot (+0,5 - (-0,4))$$

$$= 8829 \text{ Pa} = 66,2 \text{ mm Hg}$$

\* QCM 15, D



$$P_1 = P_0 + \rho g h$$

$$P_2 = P_0 + \rho g h'$$

$$\Rightarrow P_1 - P_2 = \rho g h - \rho g h'$$

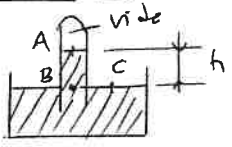
$$\cos \theta = \frac{h'}{h} \Rightarrow h' = h \cos \theta$$

$$P_1 - P_2 = \rho g h - \rho g h \cos \theta$$

$$= 10^3 \cdot 9,81 \cdot 0,10 - 10^3 \cdot 9,81 \cdot 0,10 \cdot \cos 60^\circ$$

$$= 490,5 \text{ Pa}$$

\* QCM 16, D (Torricelli)



$$P_A = 0 \text{ (vide)}$$

$$P_B = P_A + \rho g h$$

$$P_B = P_C = P_0$$

$$P_0 = \rho g h \Rightarrow h = \frac{P_0}{\rho g} = \frac{101325}{10^3 \cdot 9,81} = 10,33 \text{ m}$$

$h \gg 80 \text{ cm}$  (pas de vide qui se forme)

\* QCM 17, D (Torricelli)

$$\rho_{Hg} = 13,546 \text{ kg/L} = 13,546 \cdot 10^3 \text{ kg/m}^3$$

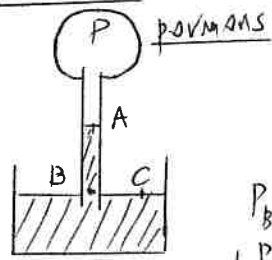
Avant:  $P_0 = \rho g h \Rightarrow h = \frac{P_0}{\rho g}$

$$= \frac{1013 \cdot 10^2}{13546 \cdot 9,81} = 0,77 \text{ m}$$

Après  $P_0' = \rho g h' \Rightarrow h' = \frac{P_0'}{\rho g}$

$$= \frac{92 \cdot 10^3}{13546 \cdot 9,81} = 0,70 \text{ m}$$

\* QCM 18, B

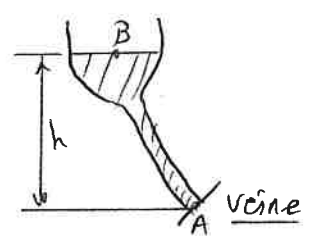


$$\begin{cases} P_A = P \\ P_B = P_C = P_0 \end{cases}$$

$$\begin{cases} P_B = P_A + \rho g h \\ P_A = P_B - \rho g h \\ P = P_0 - \rho g h \\ P_C = P_0 + P_m \end{cases} \Rightarrow P_m = -\rho g h$$

$$P_m = -10^3 \cdot 9,81 \cdot 1,05 = -10300 \text{ Pa}$$

\* QCM 19, C (perforation)



$$P_B = P_0$$

$$P_A = P_B + \rho g h = P_0 + \rho g h$$

$$P_A = P_0 + P_m = P_0 + \rho g h$$

$$\rho = 1,05 \cdot 10^3 \text{ kg/m}^3$$

Je fait que  $P_m > P_v$

$$\rho g h > P_v$$

$$h > \frac{P_v}{\rho g} = \frac{13,5 \cdot 10^3}{1,05 \cdot 10^3 \cdot 9,81}$$

$$h > 3,42 \text{ m}$$

\* QCM 20, A (perforation)

Je fait que  $P_m > P_v \Rightarrow \rho g h > P_v$

$$h > \frac{P_v}{\rho g} = \frac{27 \cdot 10^3}{1000 \cdot 9,81} = 16,9 \text{ m}$$