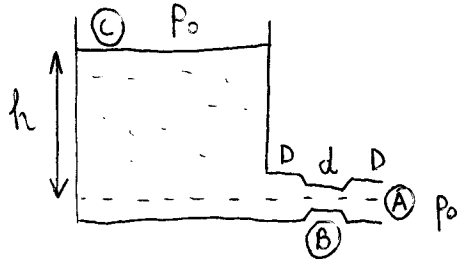


11.)

$h = 1\text{m}$     $D = 5\text{cm}$     $d = 4\text{cm}$     $\rho = 1000 \frac{\text{kg}}{\text{m}^3}$



a) (i)  $v_A = ?$       b)  $p_B = ?$

(ii)  $\frac{\Delta V}{\Delta t} = ?$

$p + \frac{1}{2} \rho v^2 + \rho gh = \text{all}$

$A v = \text{all}$

a) (i)

$p_A + \frac{1}{2} \rho v_A^2 + \rho gh_A = p_C + \frac{1}{2} \rho v_C^2 + \rho gh_C$        $p_A = p_C = p_0$        $v_C \approx 0$

$p_0 + \frac{1}{2} \rho v_A^2 + 0 = p_0 + 0 + \rho gh$

$v_A = \dots$

(ii)

$\frac{\Delta V}{\Delta t} = \frac{A v \Delta t}{\Delta t} = A v$        $A_A v_A = \frac{D^2}{4} \pi v_A = \dots$

b)

$A_A v_A = A_B v_B$

$v_B = \frac{A_A}{A_B} v_A = \dots$

$p_0 + \frac{1}{2} \rho v_A^2 = p_B + \frac{1}{2} \rho v_B^2$

$p_B = p_0 - \frac{1}{2} \rho (v_B^2 - v_A^2)$

$p_B = \dots$