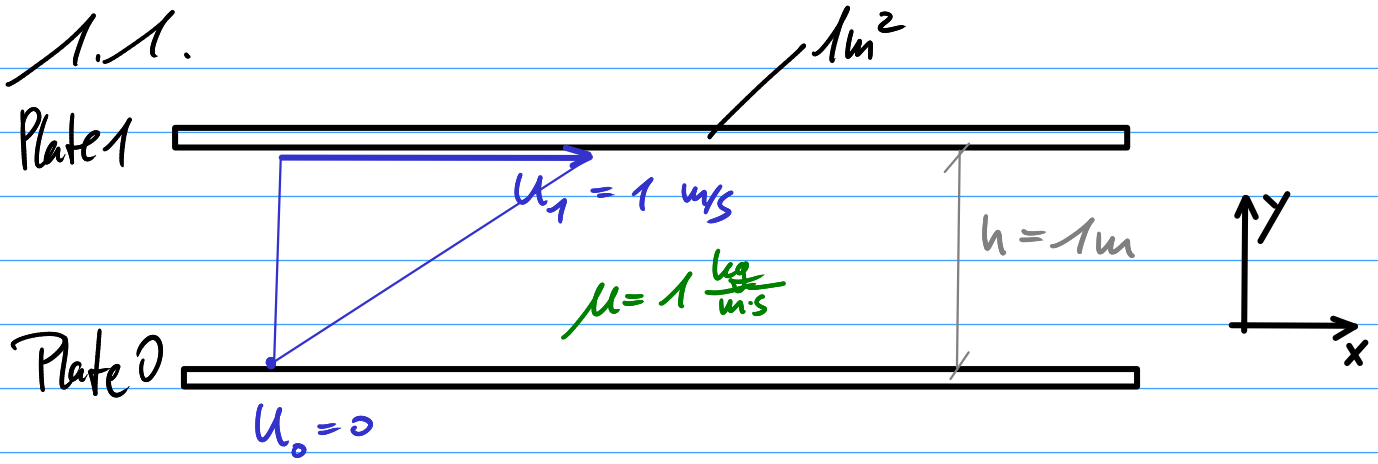
1.1.



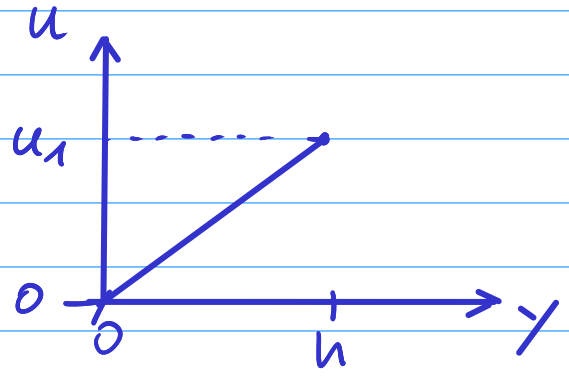
Force required, to pull plate 1 : ?

$$\tau = \mu \frac{du}{dy}$$?

τ: ↑ stress = $\frac{\text{Force}}{\text{Area}}$ $\Rightarrow$ Force $f = \tau \cdot A$?

μ: ✓

$$\frac{du}{dy} = \frac{\Delta u}{\Delta y} = \frac{u_1}{h}$$

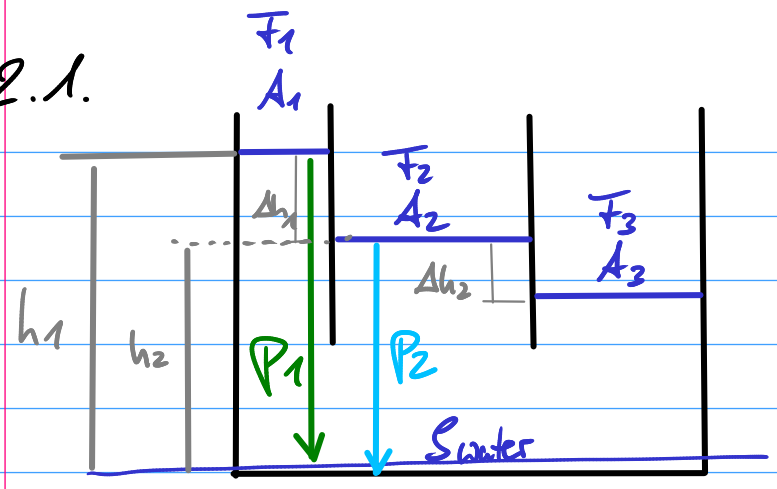


$$f = \tau \cdot A = \mu \frac{du}{dy} \cdot A = \mu \frac{u_1}{h} \cdot A$$

$$= 1 \cdot \frac{1}{1} \cdot 1 \cdot \frac{kg}{m \cdot s} \cdot \frac{m/s}{m} \cdot m^2$$

$$= 1 \; kg \frac{m}{s^2} = 1 \, N$$

2.1.



pressure at top

$$p(z) = p_0 + g\rho z$$

$$p_1 = p_2$$

$$p_1 = p_{1,top} + g\rho h_1 \qquad p_2 = p_{2,top} + g\rho h_2$$

$$p_{1,top} = \frac{F_1}{A_1} \qquad p_{2,top} = \frac{F_2}{A_2}$$

$$\Rightarrow \quad p_{1,top} + g\rho h_1 = p_{2,top} + g\rho h_2 \quad \left| -g\rho h_2 \right. \left| - p_{1,top} \right.$$

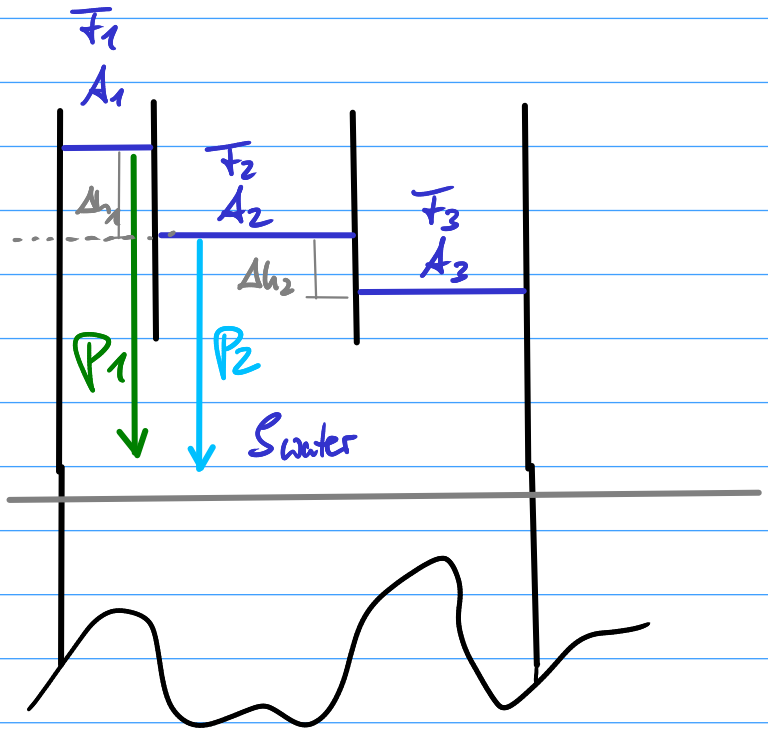
$$\underbrace{g\rho h_1 - g\rho h_2}_{g\rho(\underbrace{h_1 - h_2}_{\Delta h_1})} = p_{2,top} - p_{1,top} \quad \left| \, g\rho \right.$$

$$\Delta h_1 = \frac{p_{2,top} - p_{1,top}}{g\rho}$$

Similarly

$$\Delta h_2 = \frac{p_{3,top} - p_{2,top}}{g\rho}$$

$\Rightarrow$ Numbers...



take this as reference level!

uneven bottom.