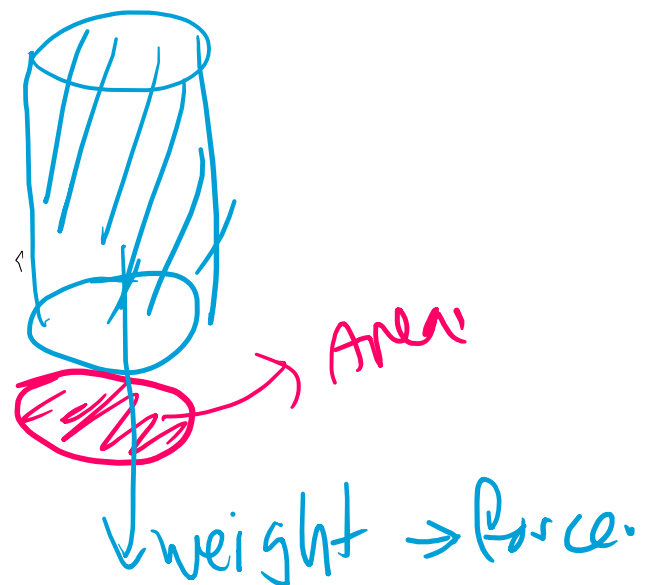


Pressure Pascal
Pa

effect of particles apply
force on a surface- or
other objects

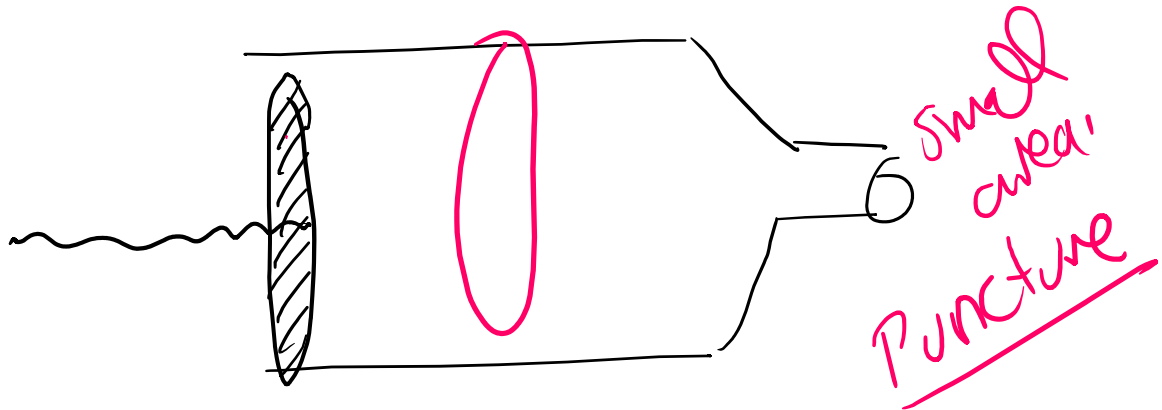
$$P = \frac{F}{A}$$

$$P = \frac{F}{A}$$

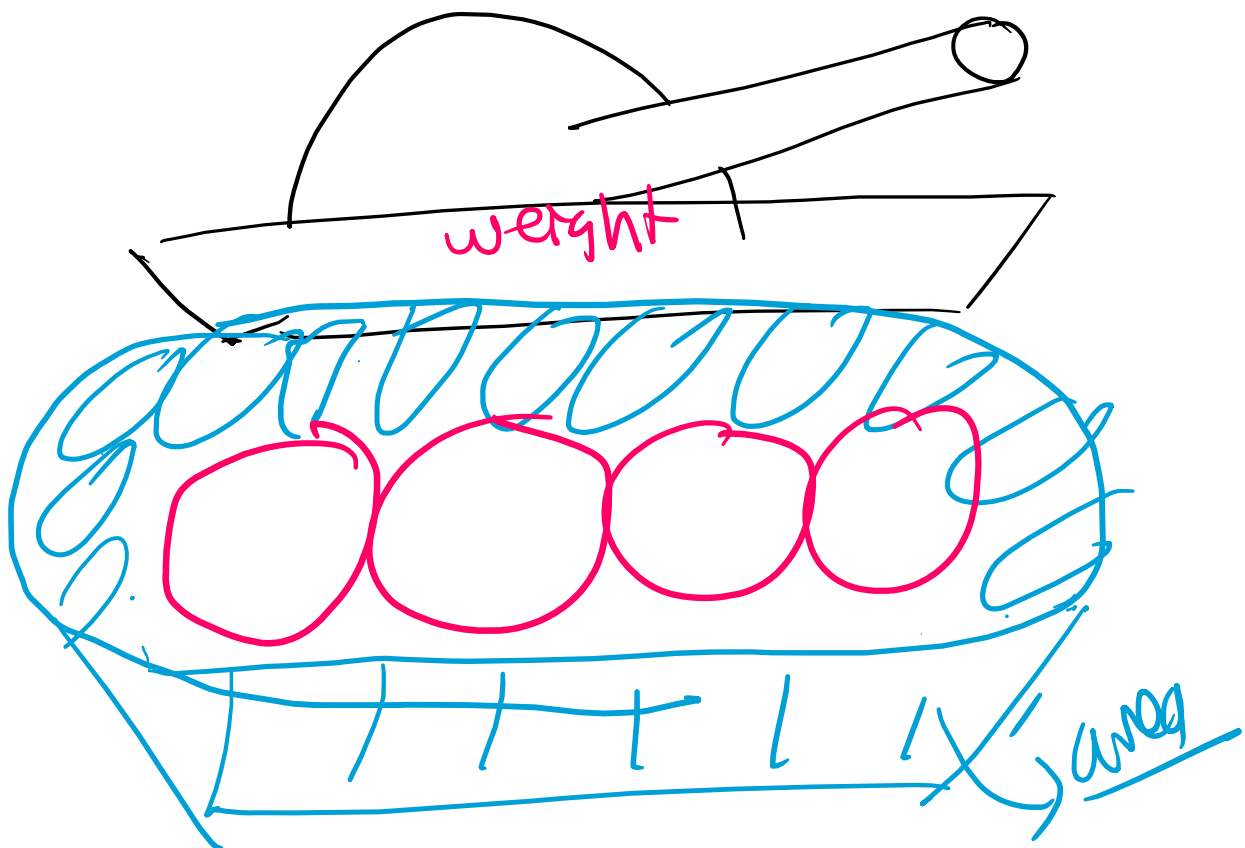
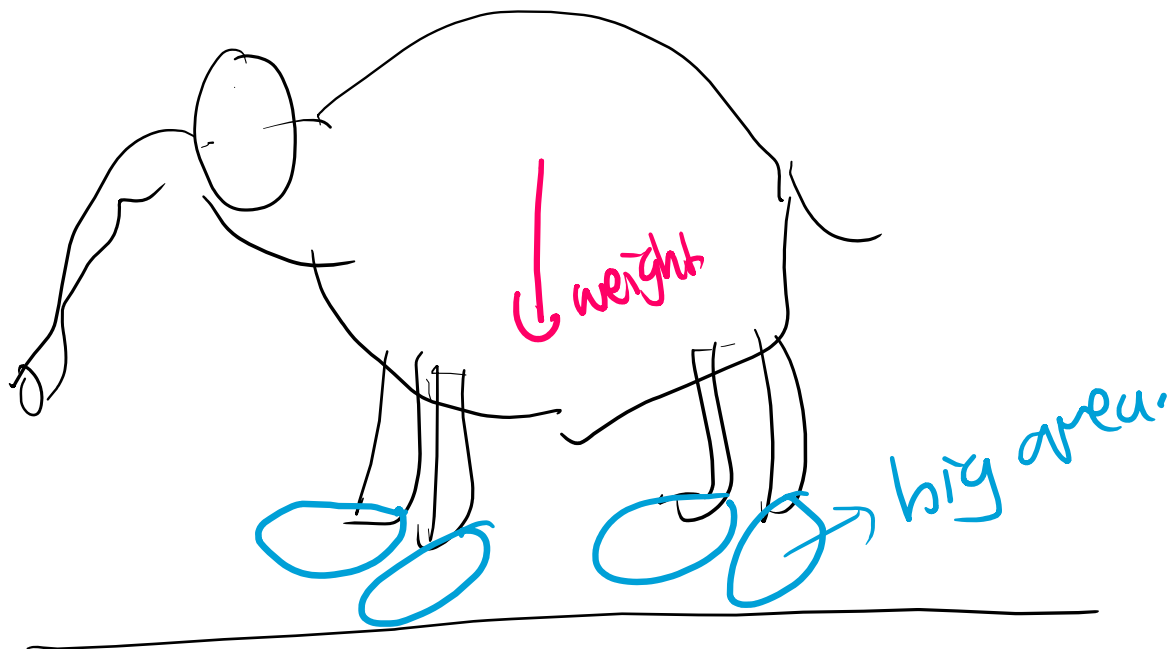


needle

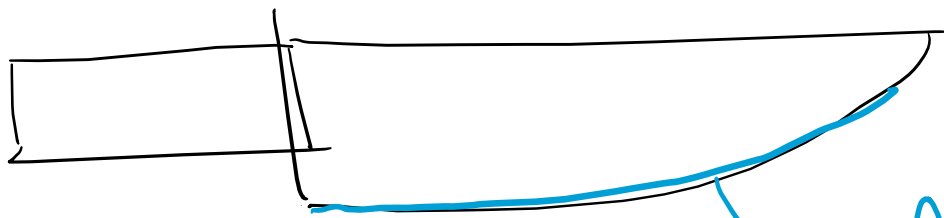
Syringe



elephant

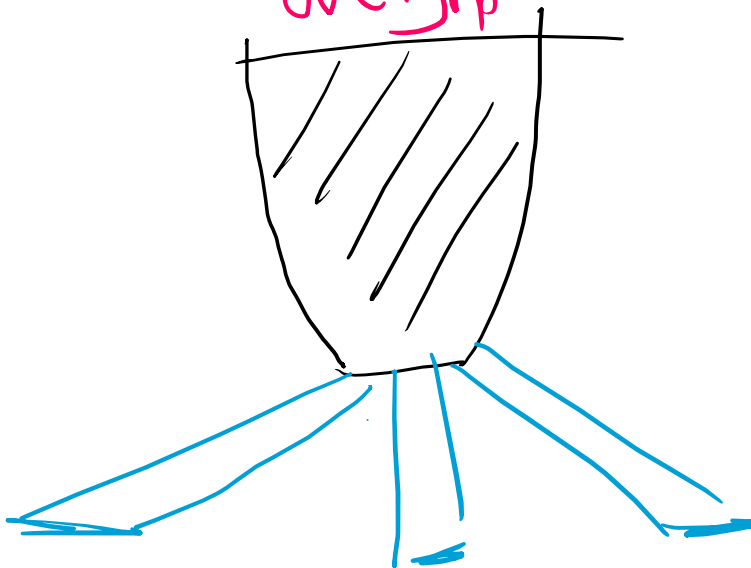


knife

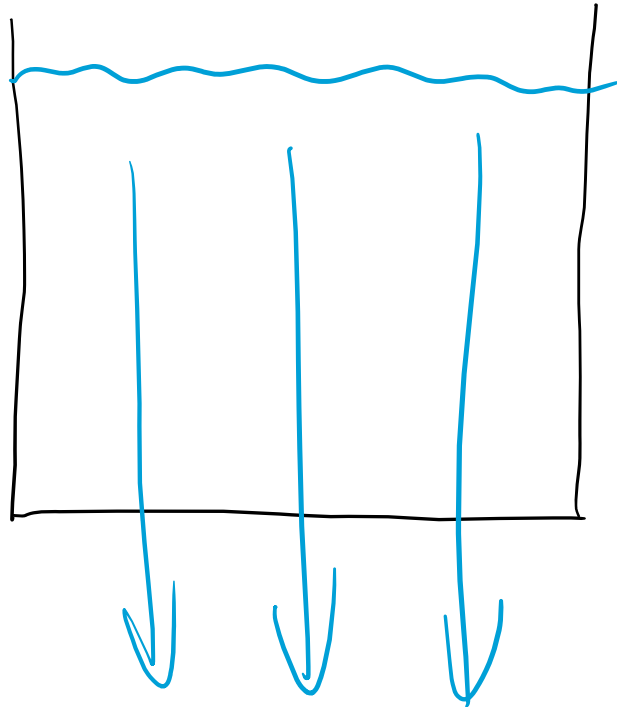


Small Area.

Weight



fluid pressure



pressure

$$\rho = \frac{m}{V}$$

$$m = \rho V$$

$$V = A \times h$$

$$p = \frac{F}{A} = \frac{mg}{A}$$

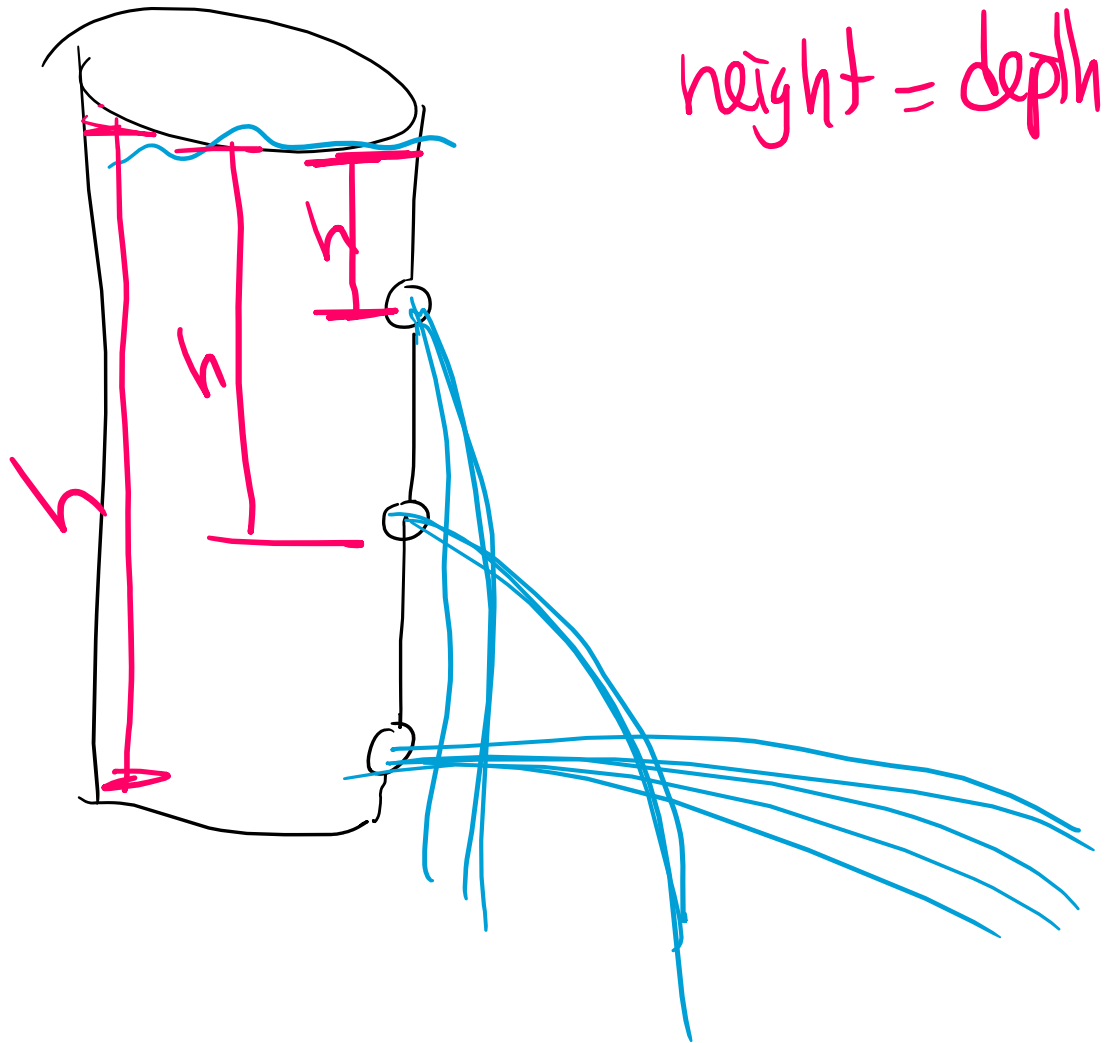
$$= \frac{\rho V g}{A}$$

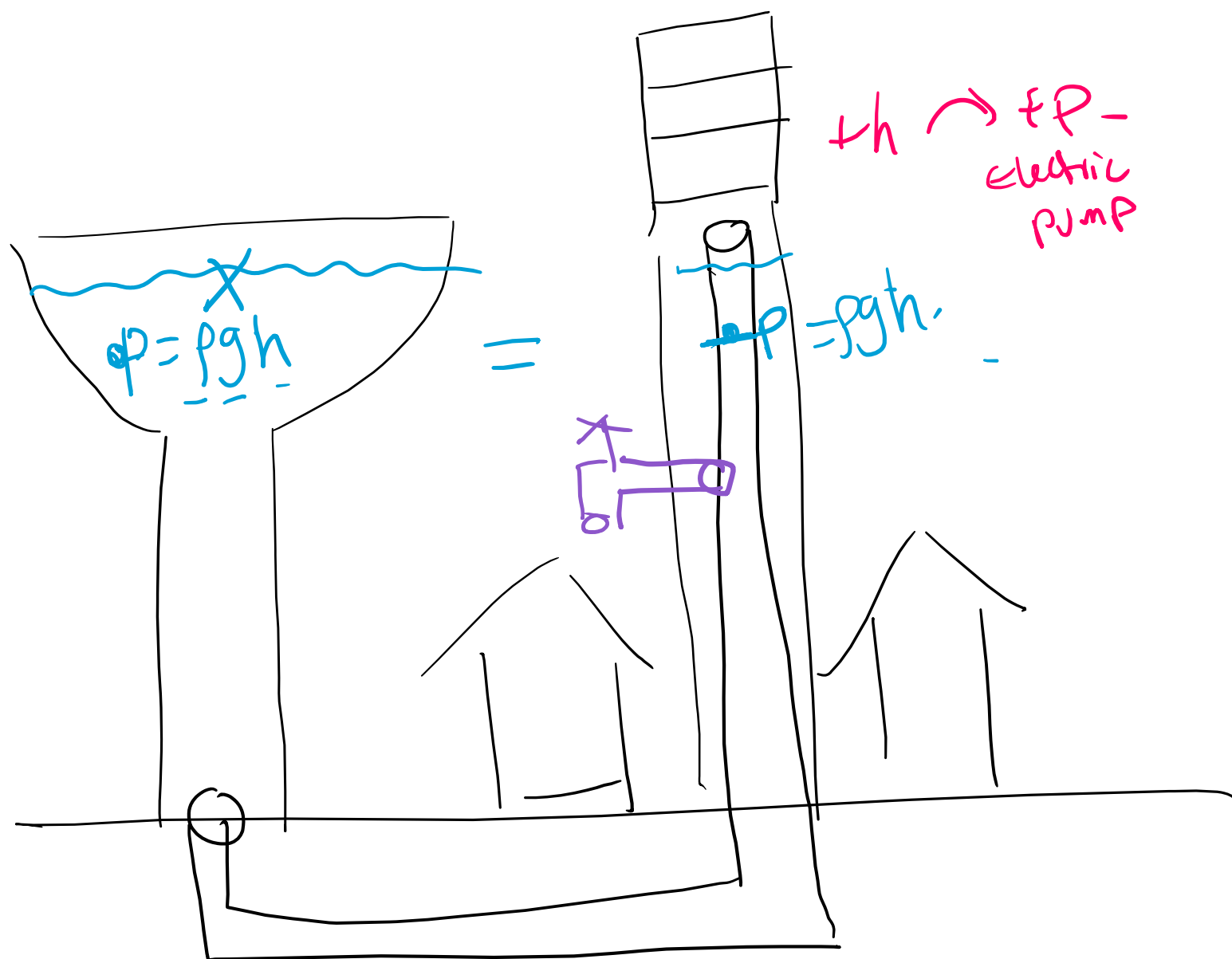
$$= \frac{\rho \cancel{A} h g}{\cancel{A}} = \boxed{\rho g h}$$

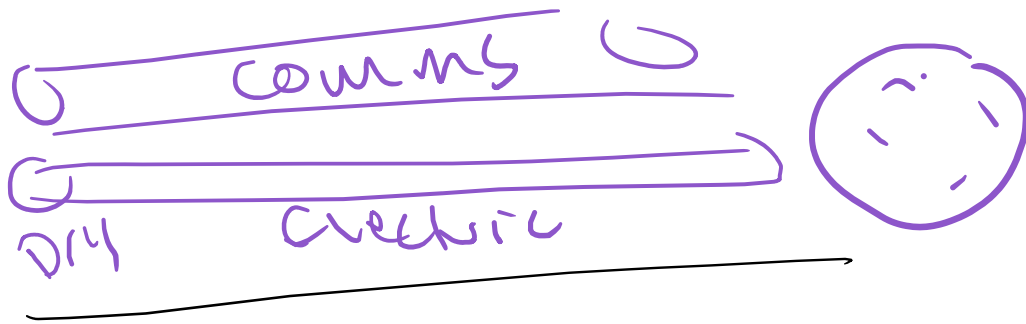
$$P = P_0 + \rho gh$$

P → pressure
 P_0 → const
 ρ → const
 h → height

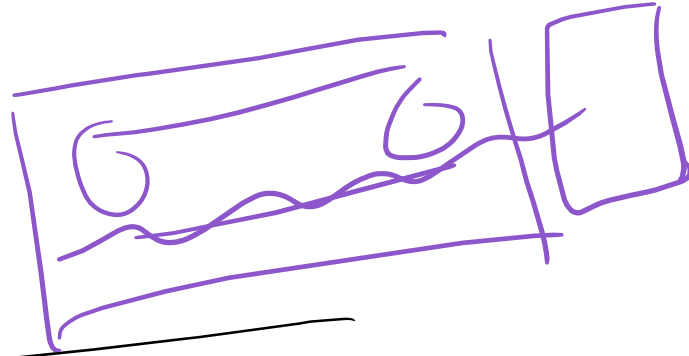
height = depth



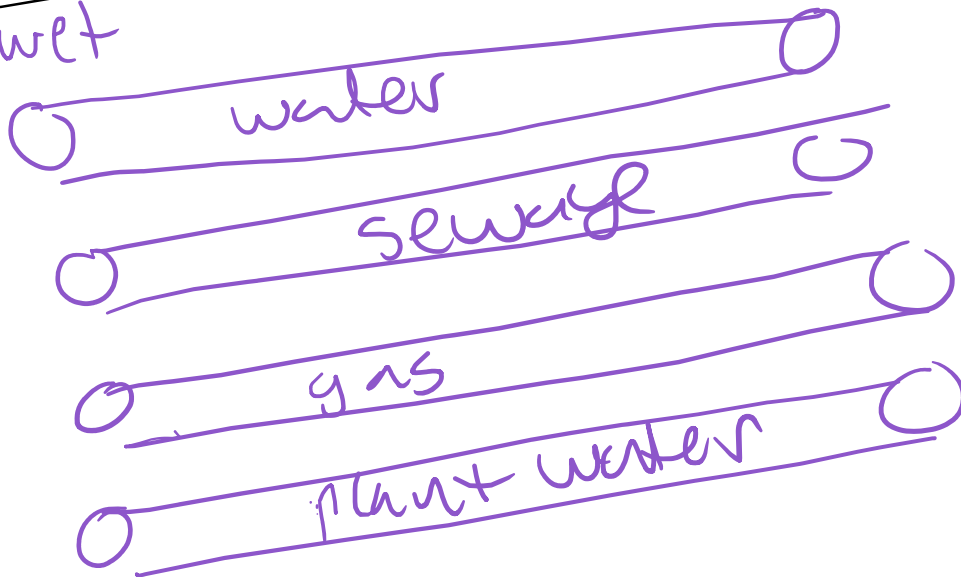




road



wet



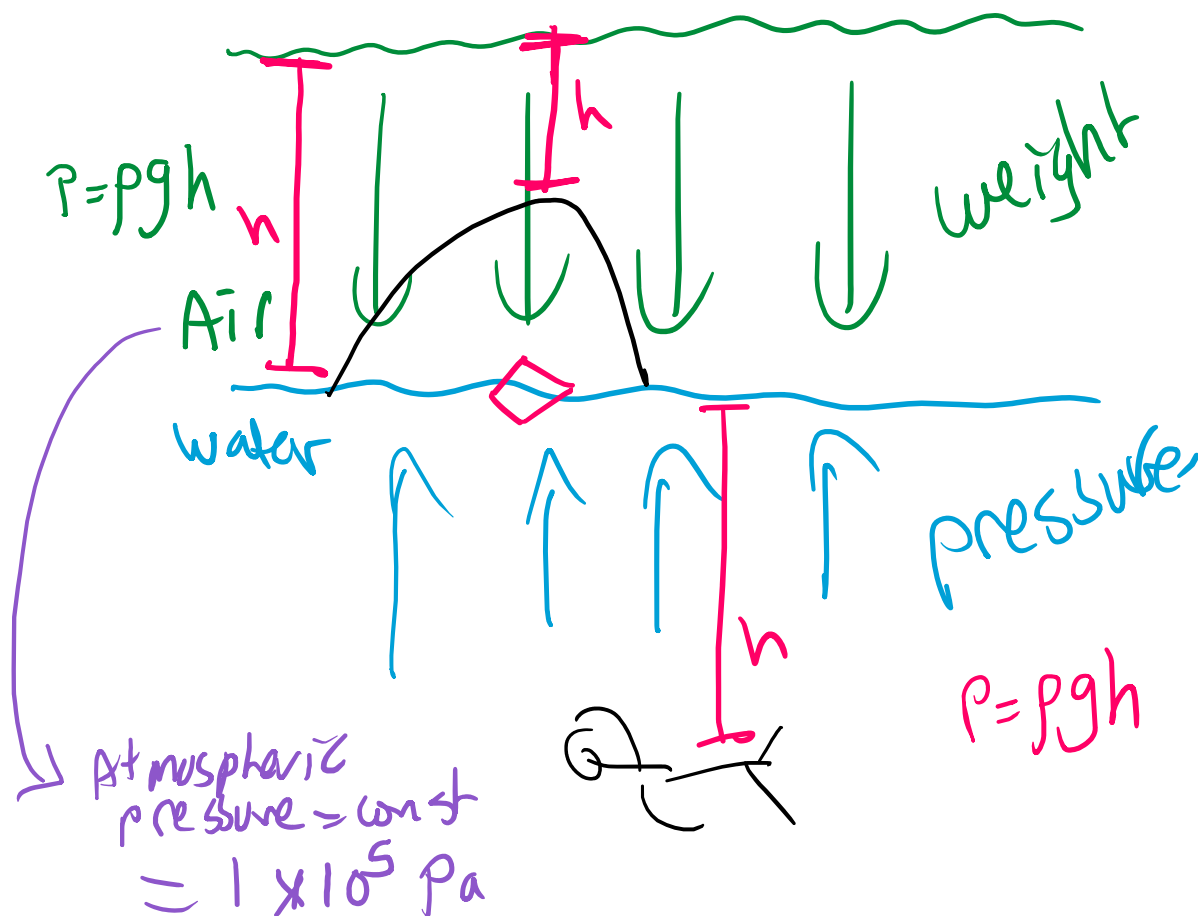
Pressure in fluids is
the same at the same height

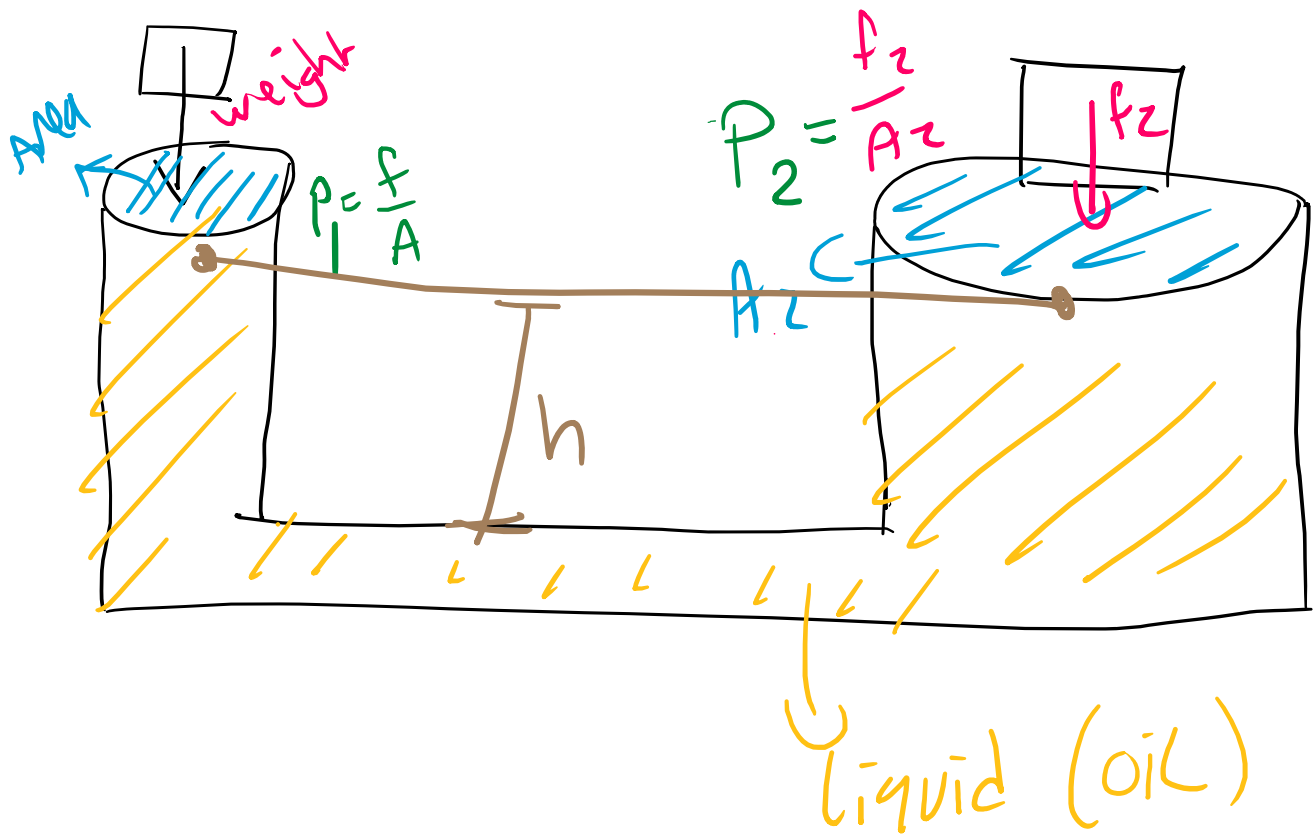
Sea Level

building 100m
above sea level

why?

space





pressure in fluids is Equal at the same height

$$P_1 = P_2$$

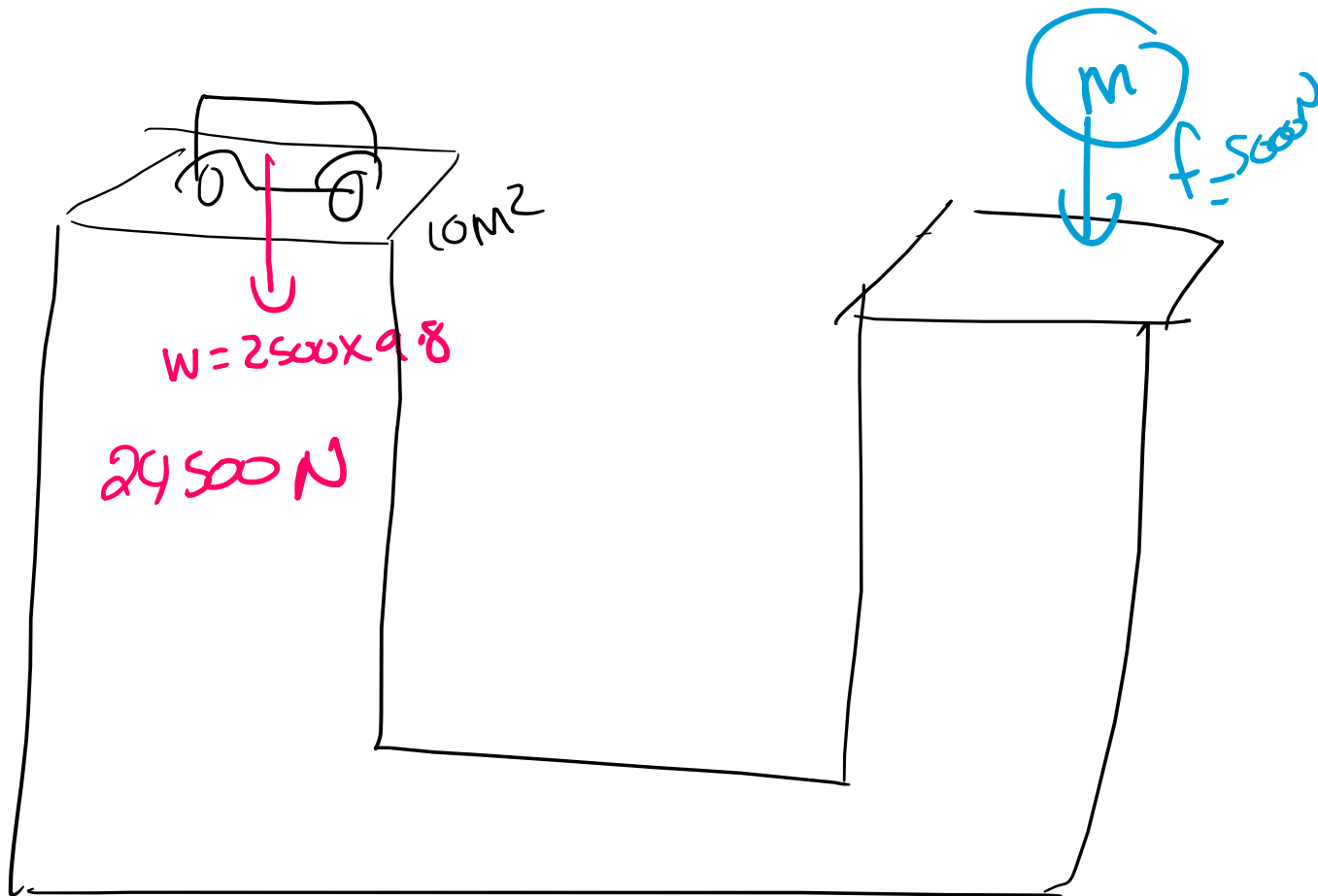
$$\frac{F_1}{A_1} = \frac{f_2}{A_2}$$

A car of mass 2500 kg- is
placed on a hydraulic lift

works by using
fluid pressure.

with Area = 10 m^2 .

If an electric motor can
supply a force of 5000 N,
what is the area required to
apply by the motor to lift
the car.



$$\frac{f_1}{A_1} = \frac{f_2}{A_2}$$

$$A_2 = \frac{f_2 \times A_1}{f_1}$$

$$= \frac{500 \times 10}{24500} = 2 \text{ m}^2$$

Brakes

