

Pressure in fluids

- Pascal's Principle:

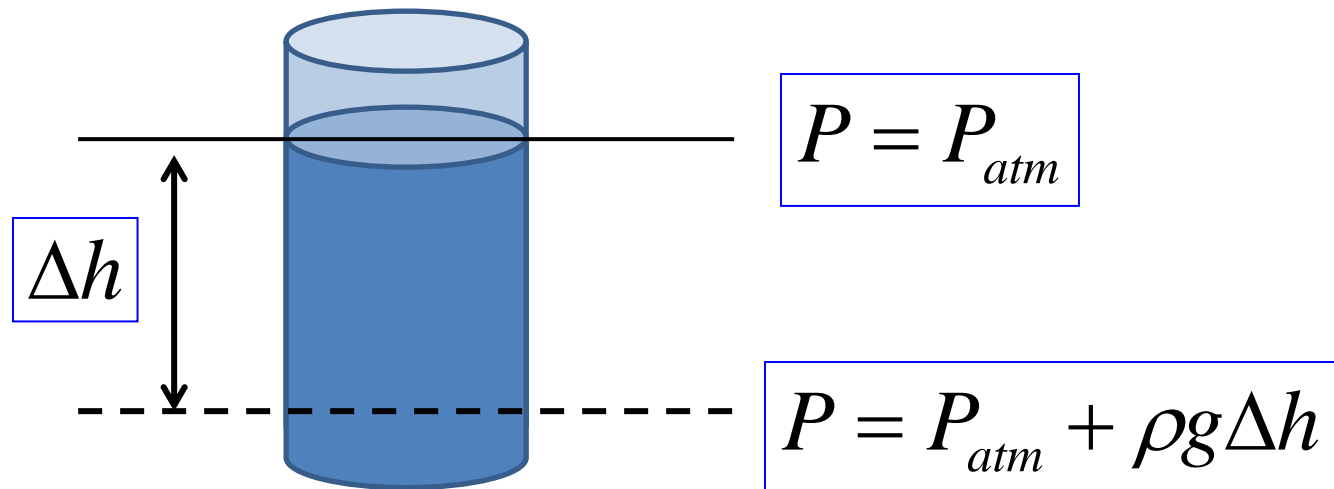
“Pressure in static fluid is transmitted uniformly in all directions”

$$P = \text{const}$$

(static fluid, no gravity)

- **Hydrostatic Pressure.** Due to gravity, the pressure increases as you go deeper in fluid (ρ is the density of the fluid, g – free fall acceleration, h – depth under the surface):

$$\Delta P = \rho g \Delta h$$



Homework 18

Problem

Find pressure created at depth 0.6 meters in water, oil and mercury. Density of water is 1000 kg/m^3 , of oil – 800 kg/m^3 , of mercury – 13600 kg/m^3 .