Pressure in fluids

- **Pascal's Principle:**

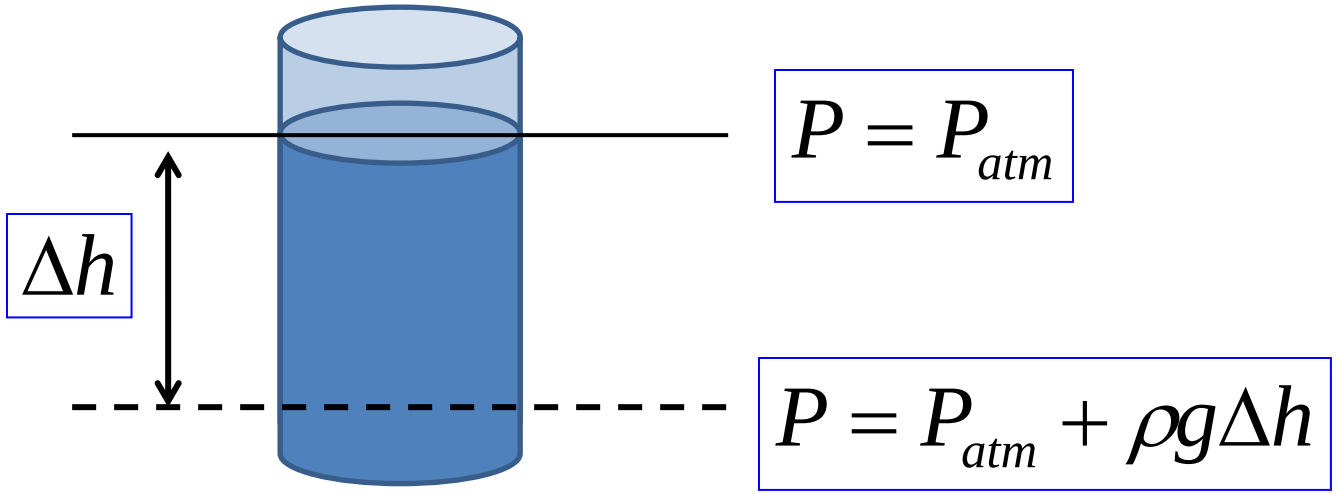
"Pressure in static fluid is transmitted uniformly in all directions"

P = *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 24

Problem 1

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

Problem 2

At what depth in the water the pressure is the same as at the depth of 76 cm in mercury? Use the densities from the previous problem.