



해군사관학교

REPUBLIC OF KOREA NAVAL ACADEMY

유체역학

『7. 액주계, 평면 작용 정수력』

해군사관학교 공학처
기계시스템공학과

기계시스템공학교수 중위 노정환

Review – Fluid Mechanics

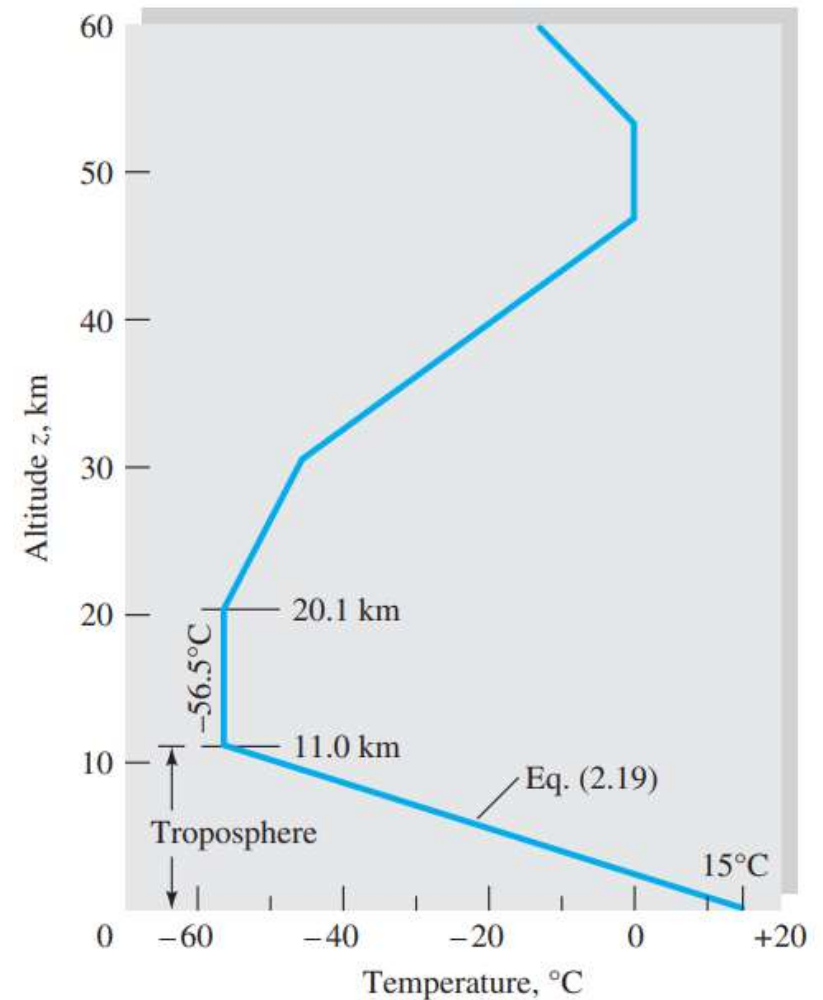
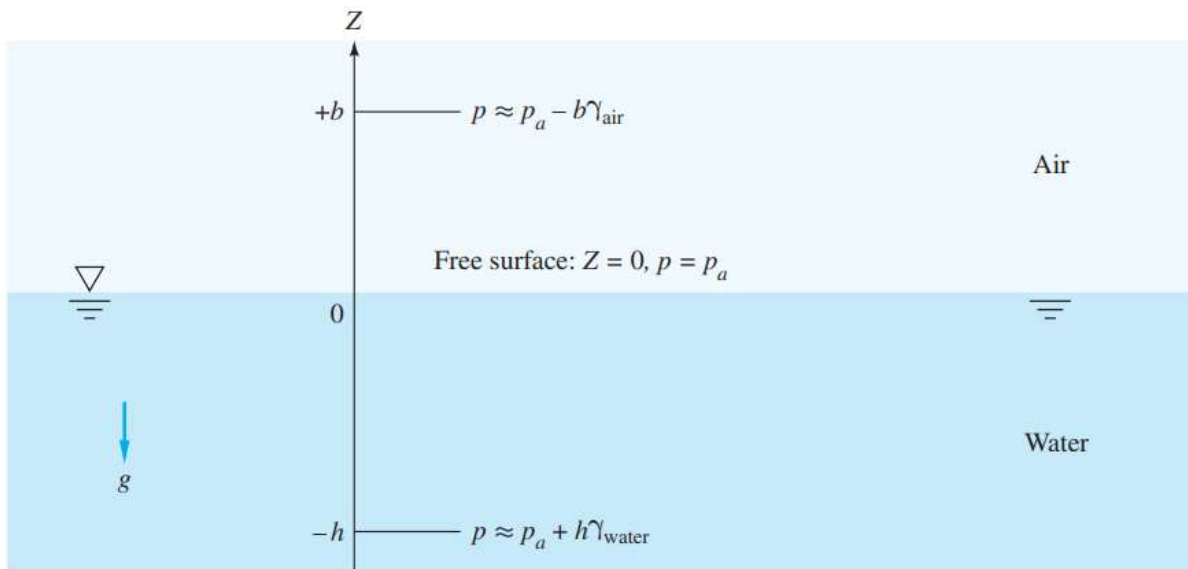


❖ Hydrostatic Pressure Distributions

- Acceleration = 0
- Hydraulic jack

❖ Hydrostatic Pressure in Gases

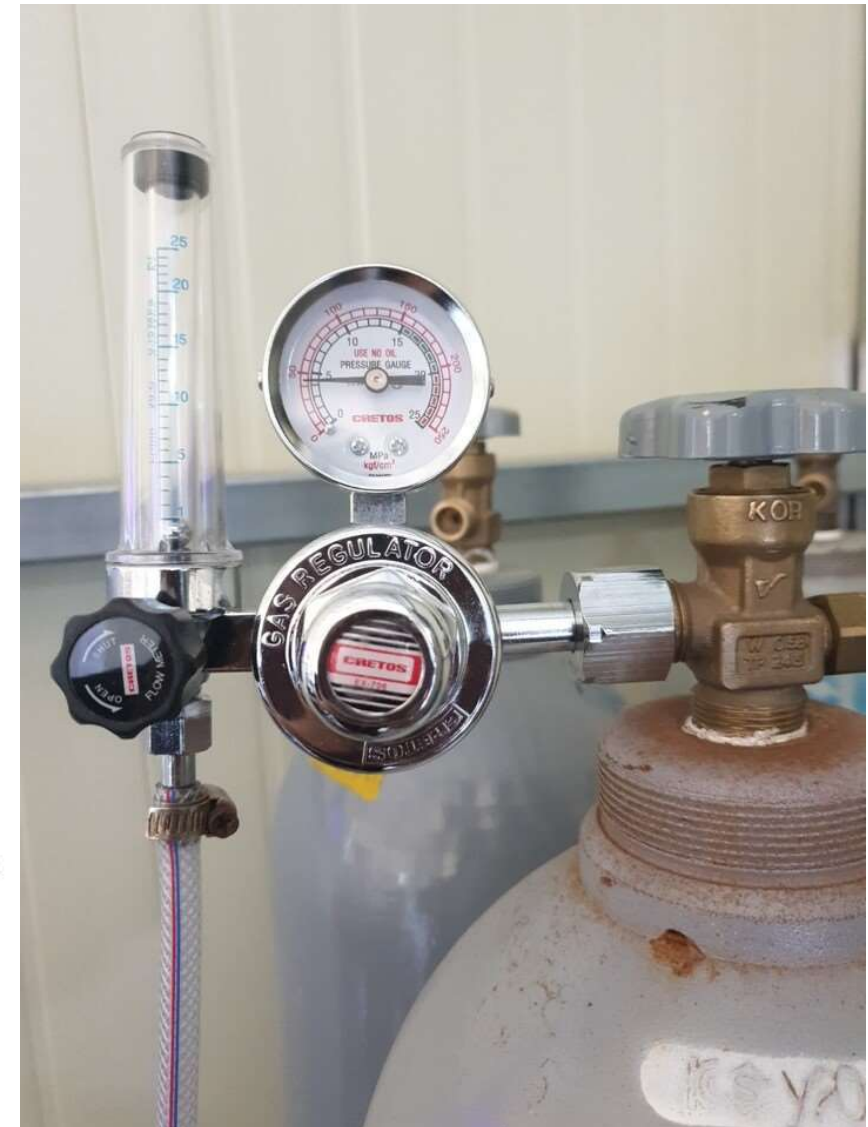
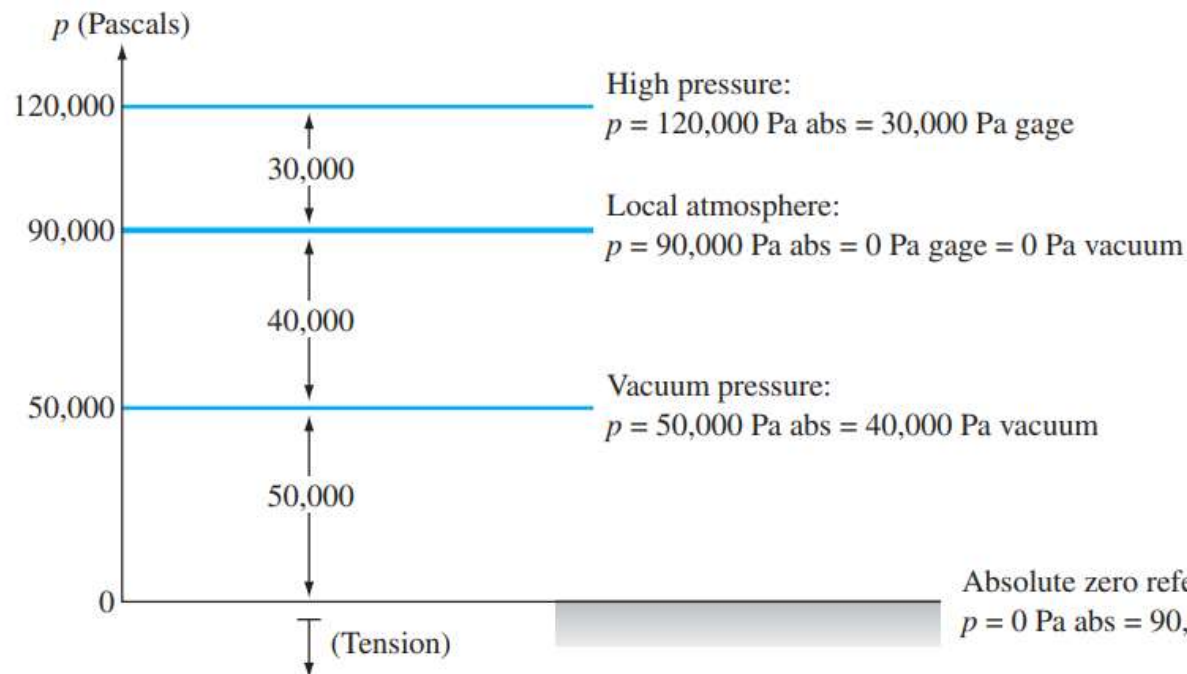
❖ The Standard Atmosphere



Absolute, Gage, Vacuum pressure



- ❖ Absolute pressure
- ❖ Atmospheric pressure
 - Barometer
- ❖ Gage pressure
- ❖ Vacuum pressure

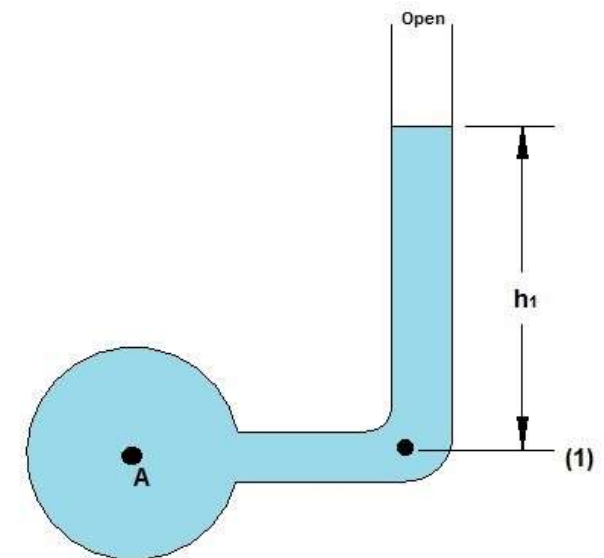
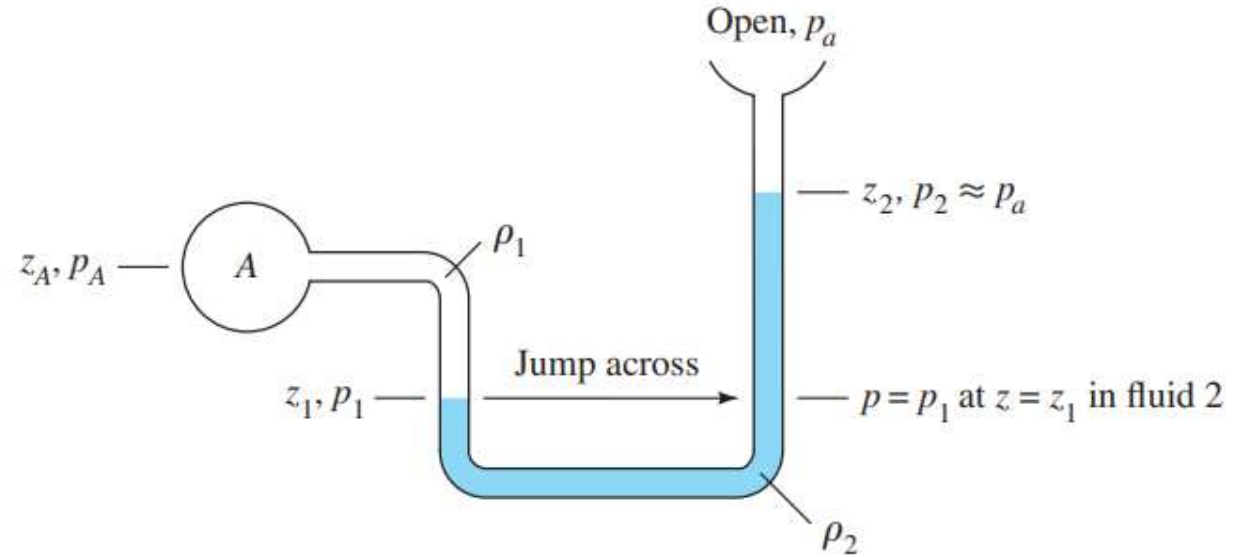
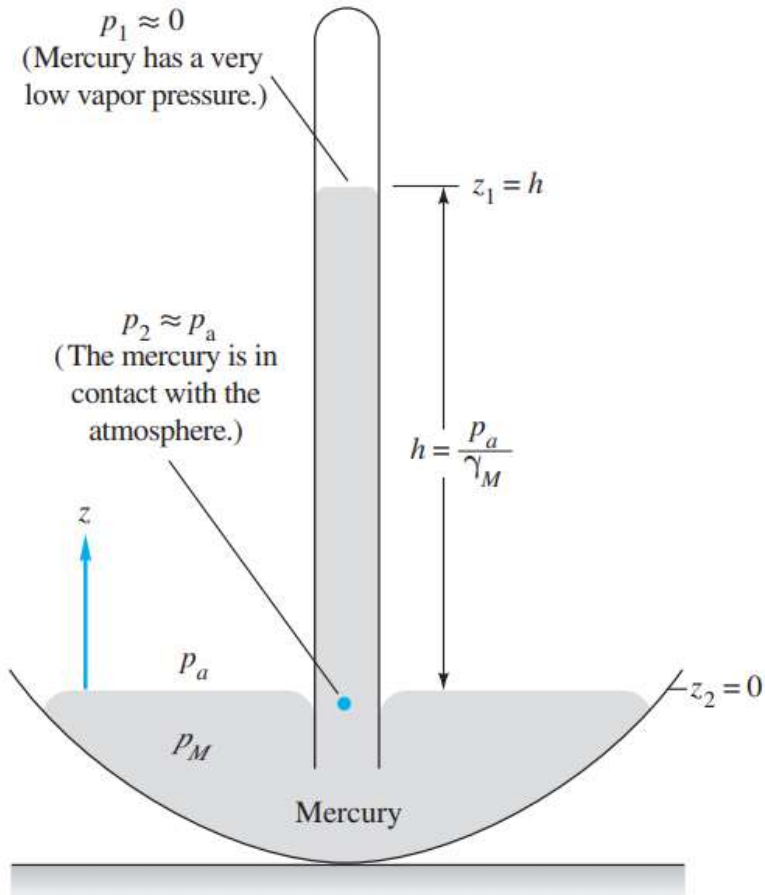


Manometer



❖ Piezometer

❖ U-tube Manometer



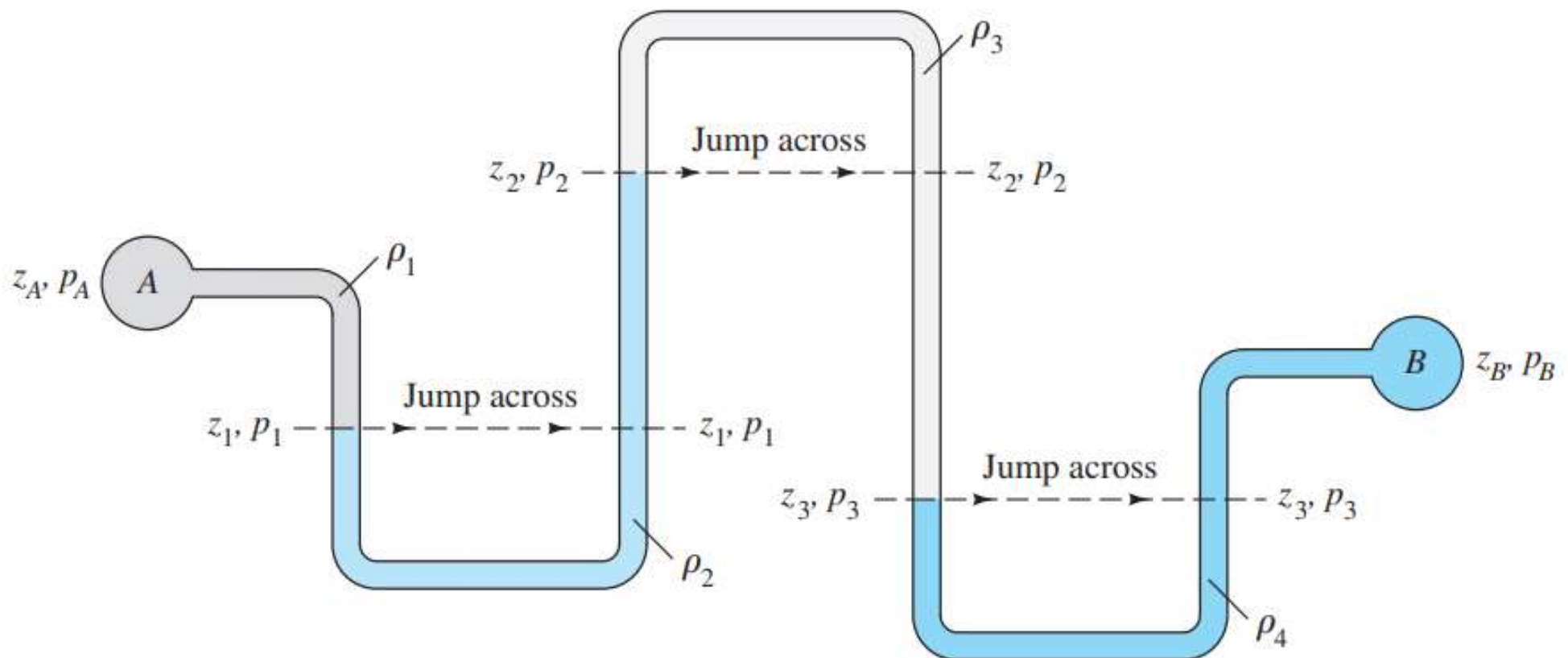
Application : Manometer



❖ U-tube Manometer

❖ Tilted Manometer

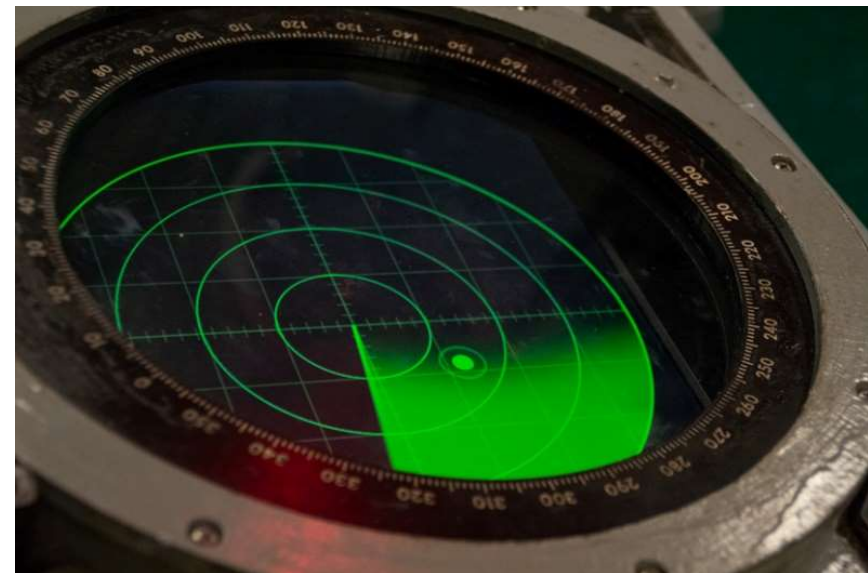
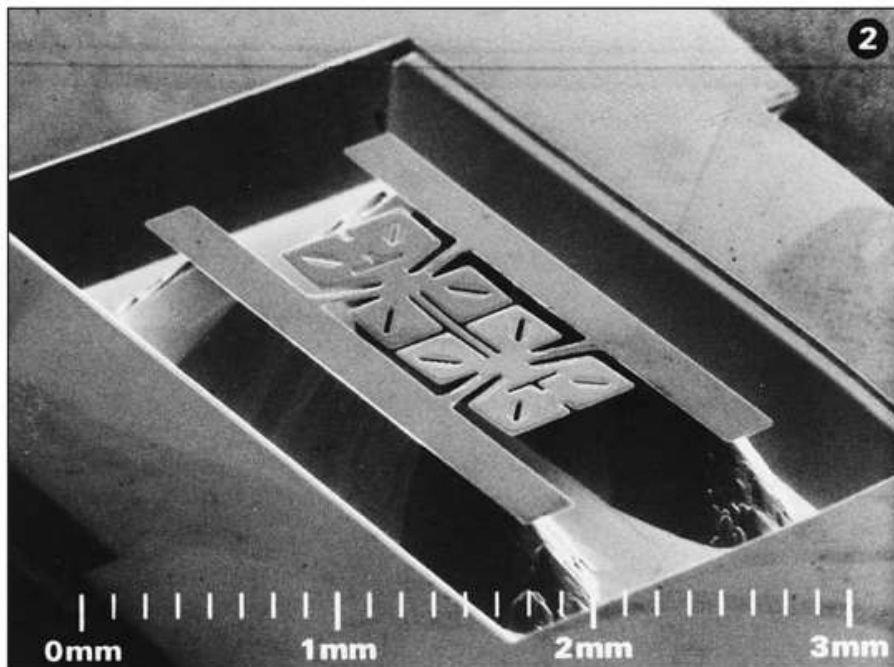
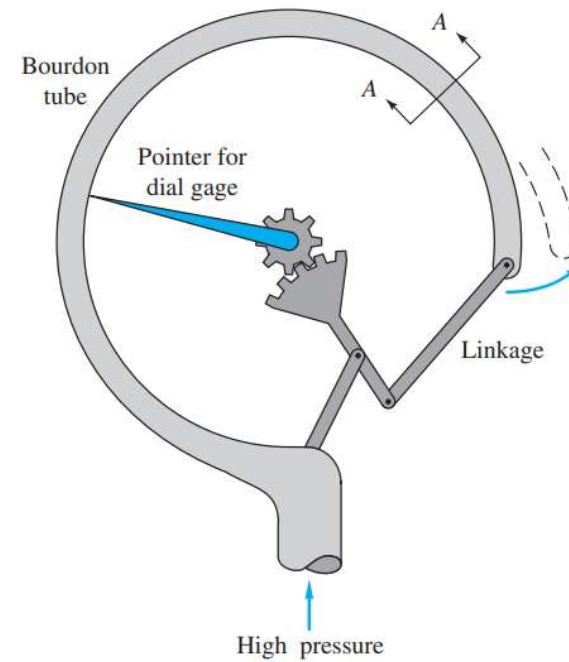
$$\begin{aligned} p_A - p_B &= (p_A - p_1) + (p_1 - p_2) + (p_2 - p_3) + (p_3 - p_B) \\ &= -\gamma_1(z_A - z_1) - \gamma_2(z_1 - z_2) - \gamma_3(z_2 - z_3) - \gamma_4(z_3 - z_B) \end{aligned}$$



Pressure measurement



- ❖ Elastic deformation
 - Bourdon tube
- ❖ Electric output
- ❖ Pressure transducer



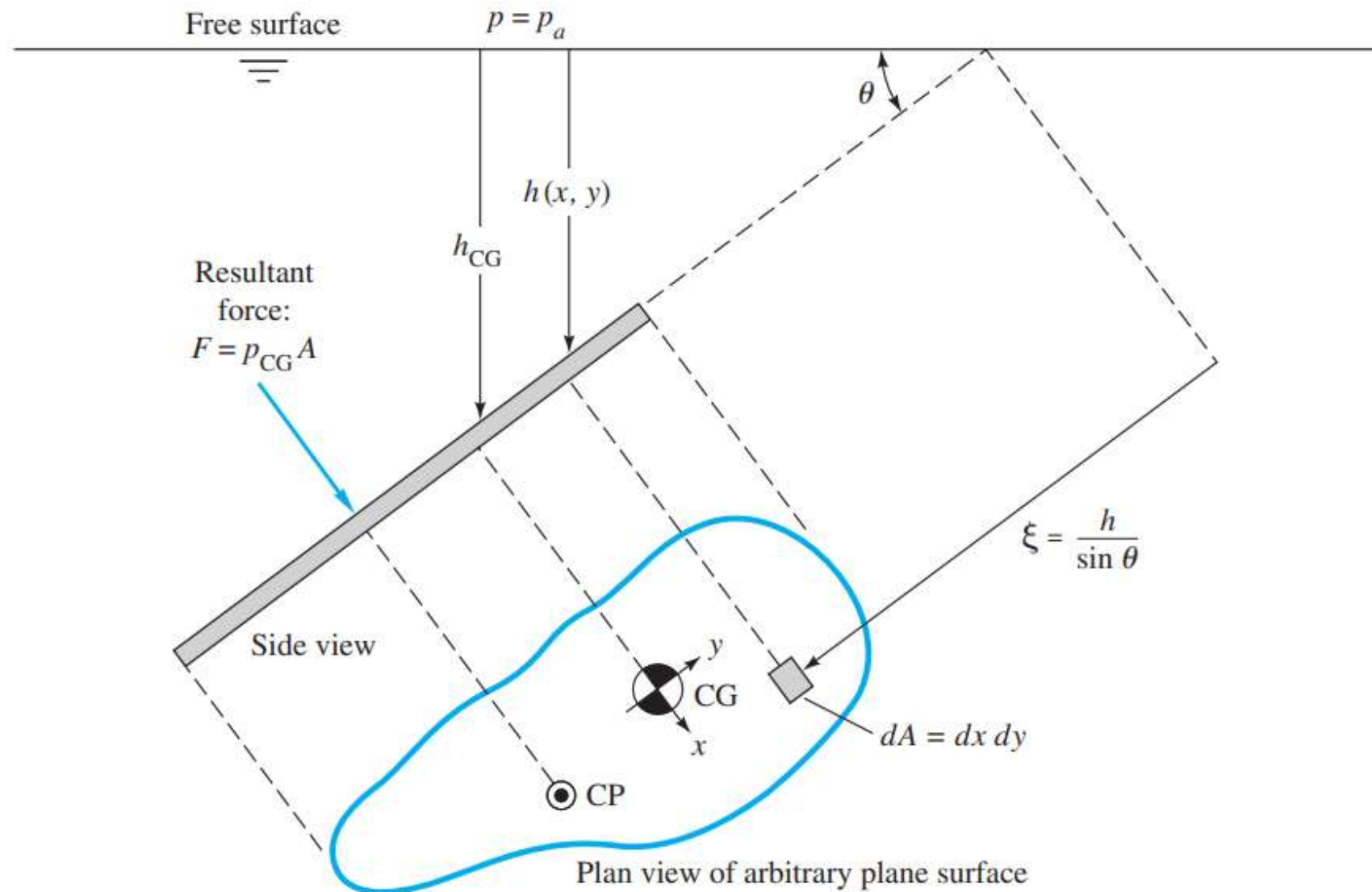
Pressure measurement



Forces on Plane Surfaces



❖ Hydrostatic Forces on Plane Surfaces



Q n A

감사합니다

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