

Continuity & Compressibility

if density changes;

$$(P_1 V_1 A_1 = P_2 V_2 A_2)$$

Volume flow rate is conserved;

$$(A_1 V_1 = A_2 V_2)$$

→ falling stream of water becomes narrower

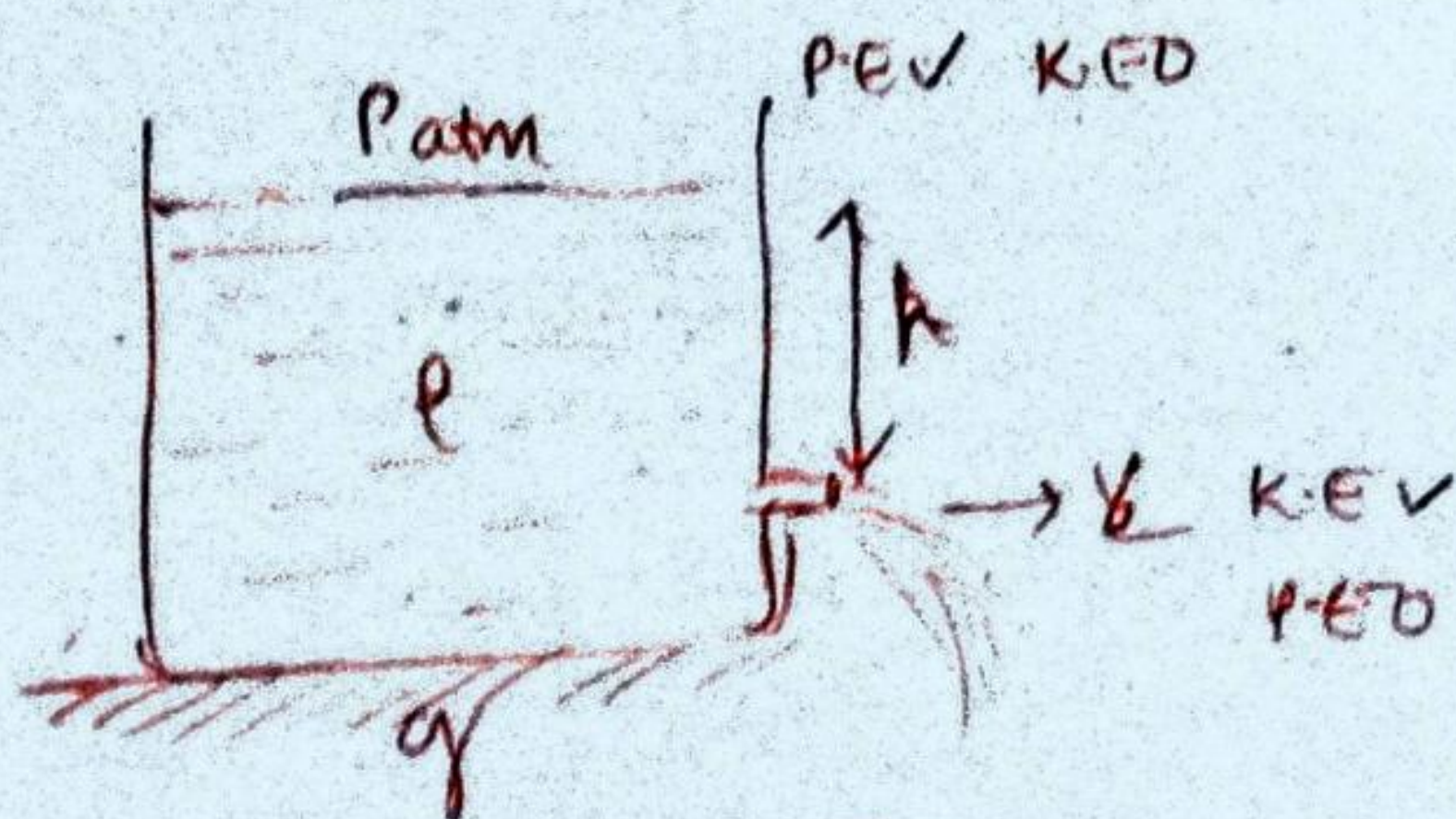
Bernoulli's Theorem;

- Energy Conservation

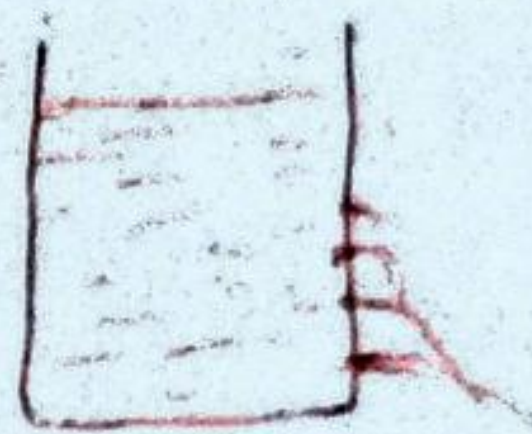
- Incompressible and non-viscous fluid is known as ideal

- Bernoulli's Theorem is applicable to only Ideal fluid in steady flow of streamline flow.

Velocity of Efflux;



$$v = \sqrt{2gh}$$



Greater is the distance of the hole from the free surface of liquid, greater will be the velocity of efflux.

Viscosity;

$$\text{Shear Strain} = \frac{\Delta x}{L}$$

$$\text{Shear rate} = \frac{v}{L}$$

$$\text{Shearing stress} = \frac{F}{A}$$

