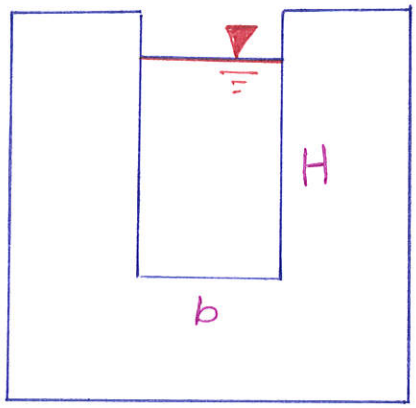
✱ Exp. # 8 :- Flow Over Weirs (1)
Coefficient of Discharge (Cd) for a Rectangular Notch.

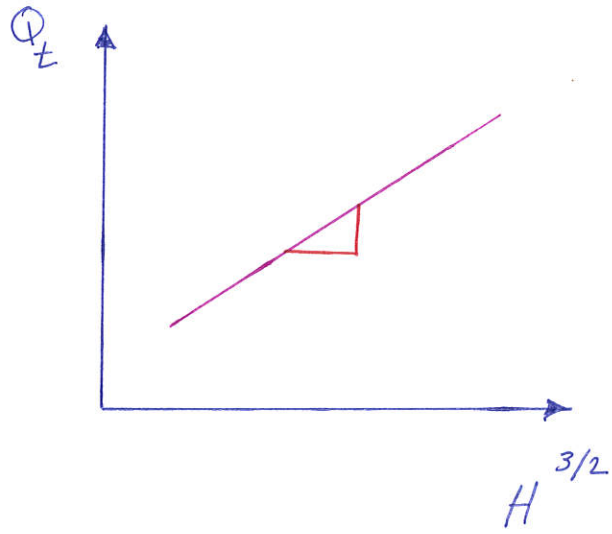
✱ Calculations :-

- $Q_t = C_d \cdot \frac{2}{3} b \sqrt{2g} \cdot H^{3/2}$



$$\rightarrow C_d = \frac{3 Q_t}{2 b \sqrt{2g}\ H^{3/2}}$$

$$\rightarrow \frac{Q_t}{H^{3/2}} = \frac{2}{3} b \sqrt{2g}\ C_d = \text{slope}$$



$\rightarrow$ slope of Curve $= \frac{2}{3} b \sqrt{2g}\ C_d$

$$\rightarrow C_d = \frac{\text{slope}}{\frac{2}{3} b \sqrt{2g}}$$

❖ Results: (Tables)

Test	Head Above Bottom of Notch, H (m)	Width of Notch, b (m)	$H^{3/2}$ ($m^{3/2}$)	Collected Volume, V (m^3)	Time to Collect, t (sec.)	Volume Flow Rate, Q_t (m^3/sec.)

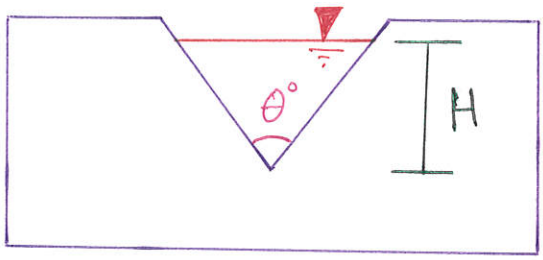
❖ Results: (Figures)

1- Plot (Q_t) against ($H^{3/2}$) and determine the slope of curve.
2- Determine the value of Coefficient of Discharge (C_d).

⊛ Exp. ** 9 :- Flow Over Weirs (2)

Coefficient of Discharge (Cd) for Triangular Notch (Vee)

⊛ Calculations :-



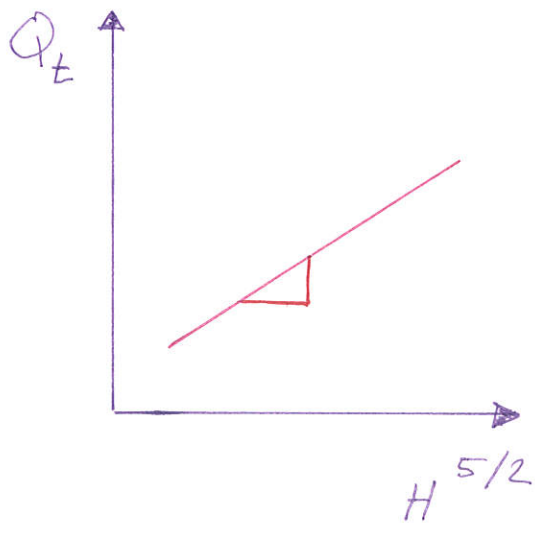
- $Q_t = C_d \cdot \frac{8}{15} \tan\left(\frac{\theta}{2}\right) \cdot \sqrt{2g}\ H^{5/2}$

$$\rightarrow C_d = \frac{15\ Q_t}{8 \tan\left(\frac{\theta}{2}\right) \sqrt{2g}\ H^{5/2}}$$

$$\rightarrow \frac{Q_t}{H^{5/2}} = \frac{8}{15} \tan\left(\frac{\theta}{2}\right) \sqrt{2g}\ C_d = \text{slope}$$

$$\rightarrow \text{Slope of Curve} = \frac{8}{15} \tan\left(\frac{\theta}{2}\right) \sqrt{2g}\ C_d$$

$$\rightarrow C_d = \frac{\text{slope}}{\frac{8}{15} \tan\left(\frac{\theta}{2}\right) \sqrt{2g}}$$



❖ Results: (Tables)

Test	Head Above Bottom of Notch, H (m)	Angle of Notch, θ (°)	$H^{5/2}$ ($m^{5/2}$)	Collected Volume, V (m^3)	Time to Collect, t (sec.)	Volume Flow Rate, Q_t (m^3/sec.)

❖ Results: (Figures)

1- Plot (Q_t) against ($H^{5/2}$) and determine the slope of curve.
2- Determine the value of Coefficient of Discharge (C_d).