

Concept

आकर दिया हो
light emerges
normally from
the other surface of
prism

or 90° from
other surface

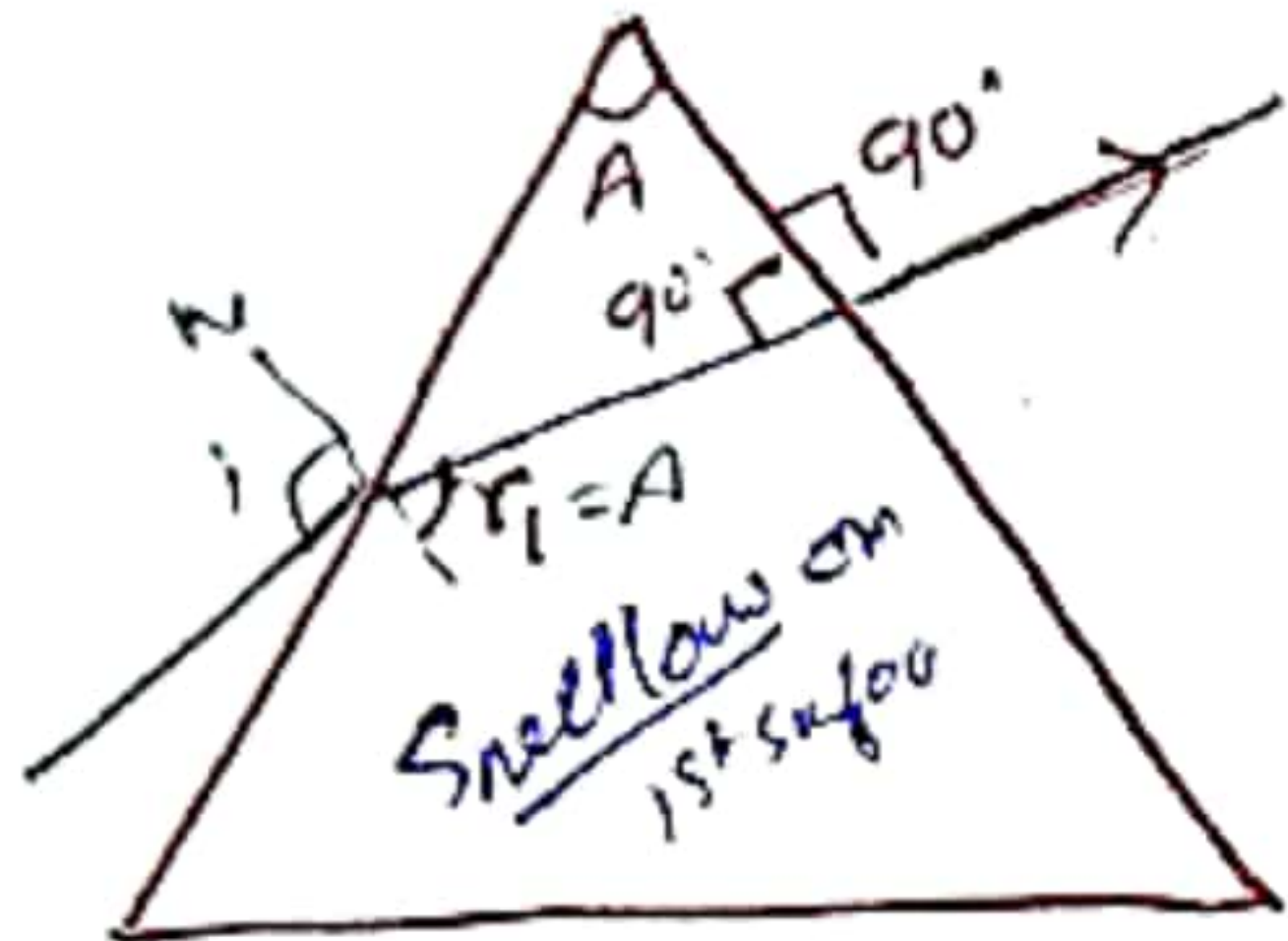
or

$$\text{then } \Rightarrow \boxed{L_e = 0}$$

$$\boxed{L_{r_2} = 0}$$

$$A = r_1 + r_2$$

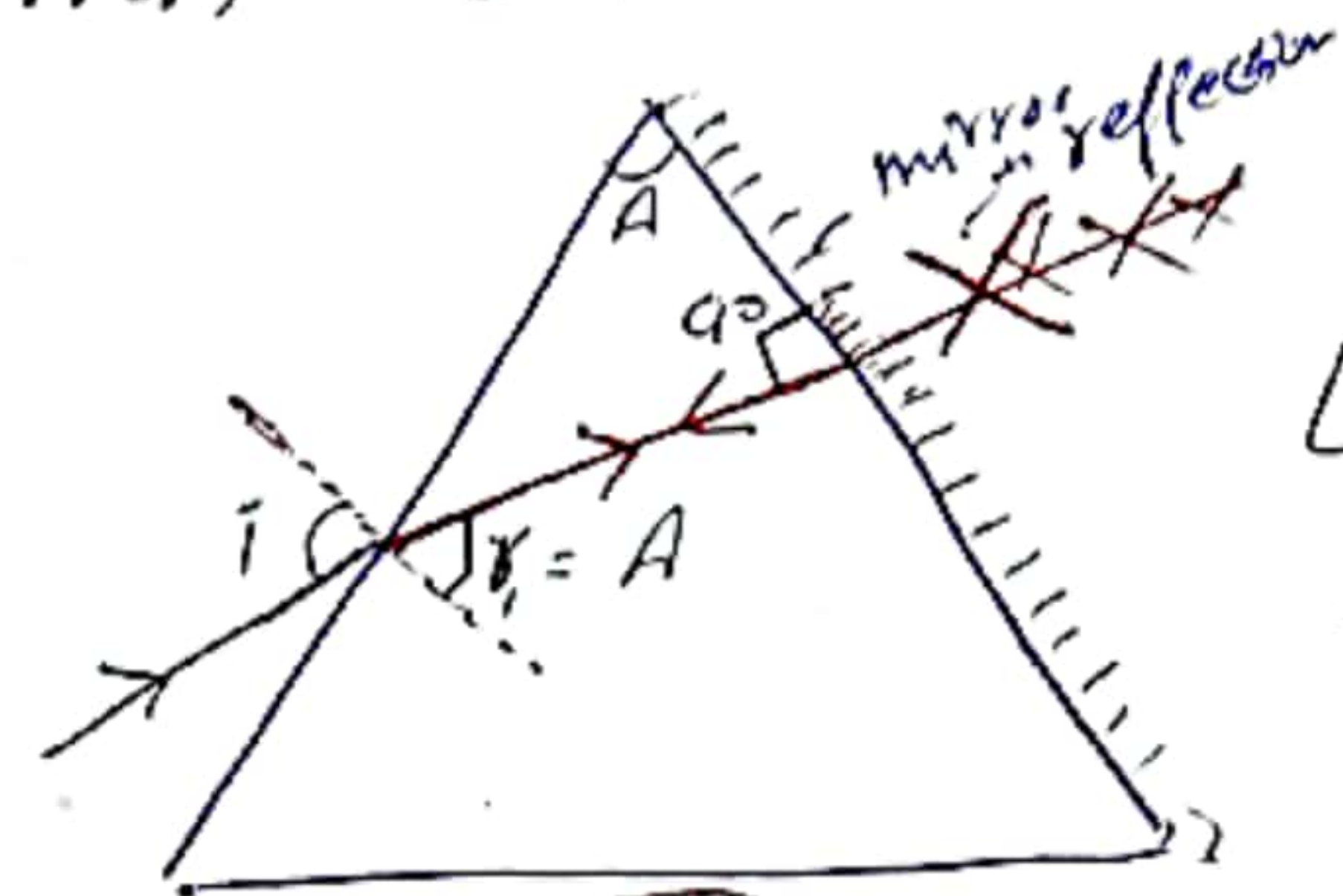
$$\boxed{A = r_1} \quad \because r_2 = 0$$



Concept

Light retraces its path

हमें ध्यान देना है ray silvered surface
(mirror) पर 90° पर strike करे then



$$\boxed{L_e = 0}$$

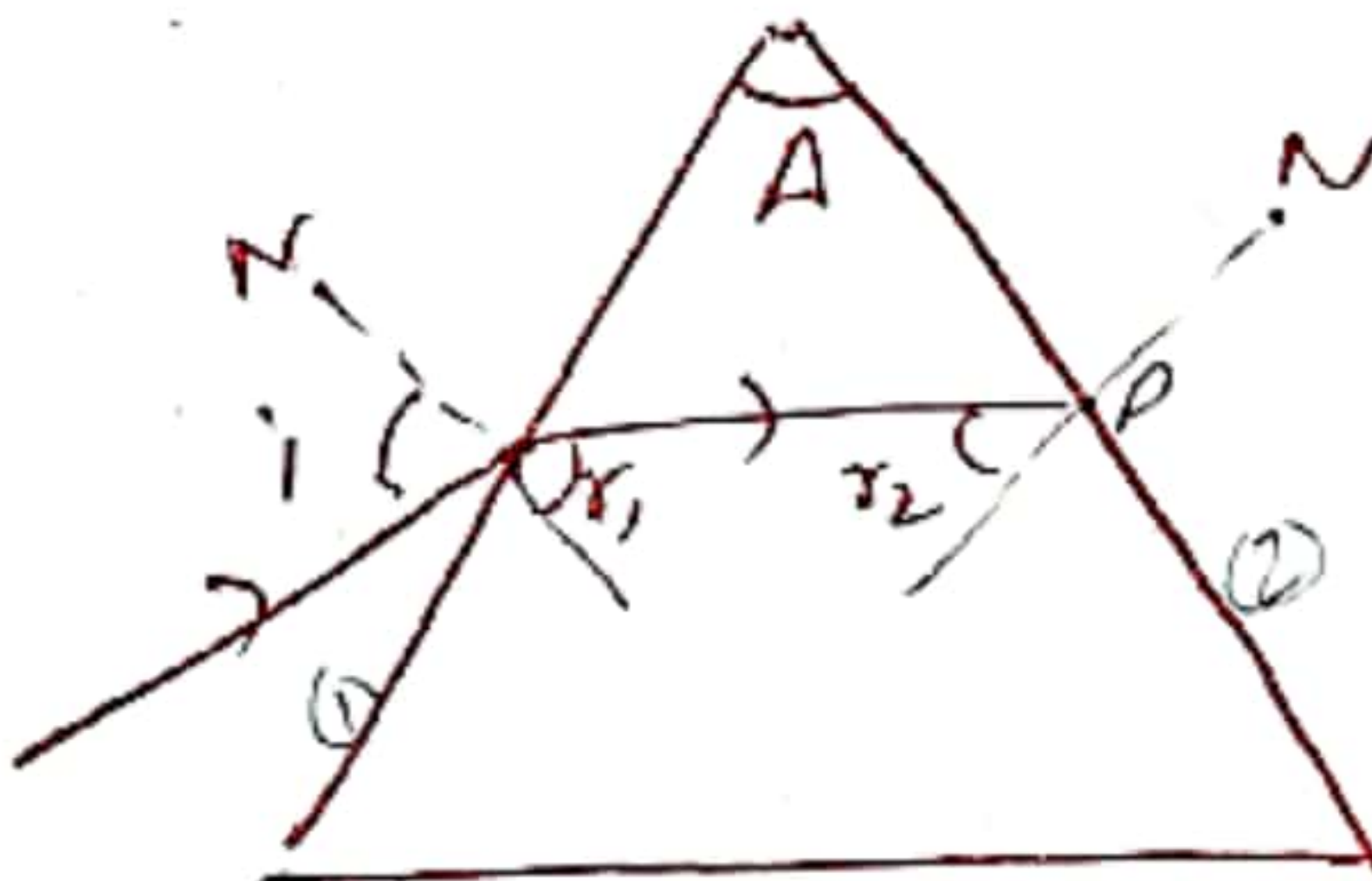
$$\boxed{L_{r_2} = 0}$$

$$A = r_1 + r_2$$

$$\boxed{A = r_1}$$

Snell's law
on first surface

Condition of No emergence



90 means 2nd surface
पर TIR होना

then 2nd surface की angle of
incidence must be greater
than θ_c

i for
2nd surface $\rightarrow r_2$

$$i > \theta_c$$

$$r_2 > \theta_c$$

$$\sin r_2 > \sin \theta_c$$

$$(r_2)_{\min} > \theta_c$$

on solving

$$\boxed{A > 2\theta_c}$$

light
will
not pass
through
2nd surface

$$\checkmark \text{ Thin prism } \Rightarrow \boxed{\delta = (\mu - 1) A}$$

Thin prism के 3 concept

① Angular dispersion (θ)

$$\boxed{\theta = \delta_v - \delta_R} \quad \text{or} \quad \boxed{\theta = (\mu_v - \mu_R) A}$$

② Mean deviation (δ_{mean})

$$\boxed{\delta_{\text{mean}} = \frac{\delta_v + \delta_R}{2}}$$

$$\text{or } \boxed{\delta_{\text{mean}} = (\mu_y - 1) A}$$

Yellow is k/o
mean color

$$\boxed{\mu_y = \frac{\mu_v + \mu_R}{2}}$$

③ Dispersive power (ω)

$$\omega = \frac{\theta}{\delta_{\text{mean}}}$$

$$\text{or } \boxed{\omega = \frac{\mu_v - \mu_R}{\mu_y - 1}}$$

range of i

Cauchy Relation

$$\mu \propto \frac{1}{\lambda}$$

9n VIBGYOR

$\lambda_{\text{red}} \uparrow \Rightarrow \mu_{\text{red}} \downarrow$
की लंबाई हाँ है
सुवि

$\lambda_{\text{violet}} \downarrow \Rightarrow \mu_{\text{violet}} \uparrow$
की लंबाई हाँ है
सुवि

for thin prism

$$\delta = (\mu - 1) A$$

$$\delta_{\text{red}} \rightarrow \text{हाँ} \quad \delta_{\text{violet}} \rightarrow \text{सुवि}$$