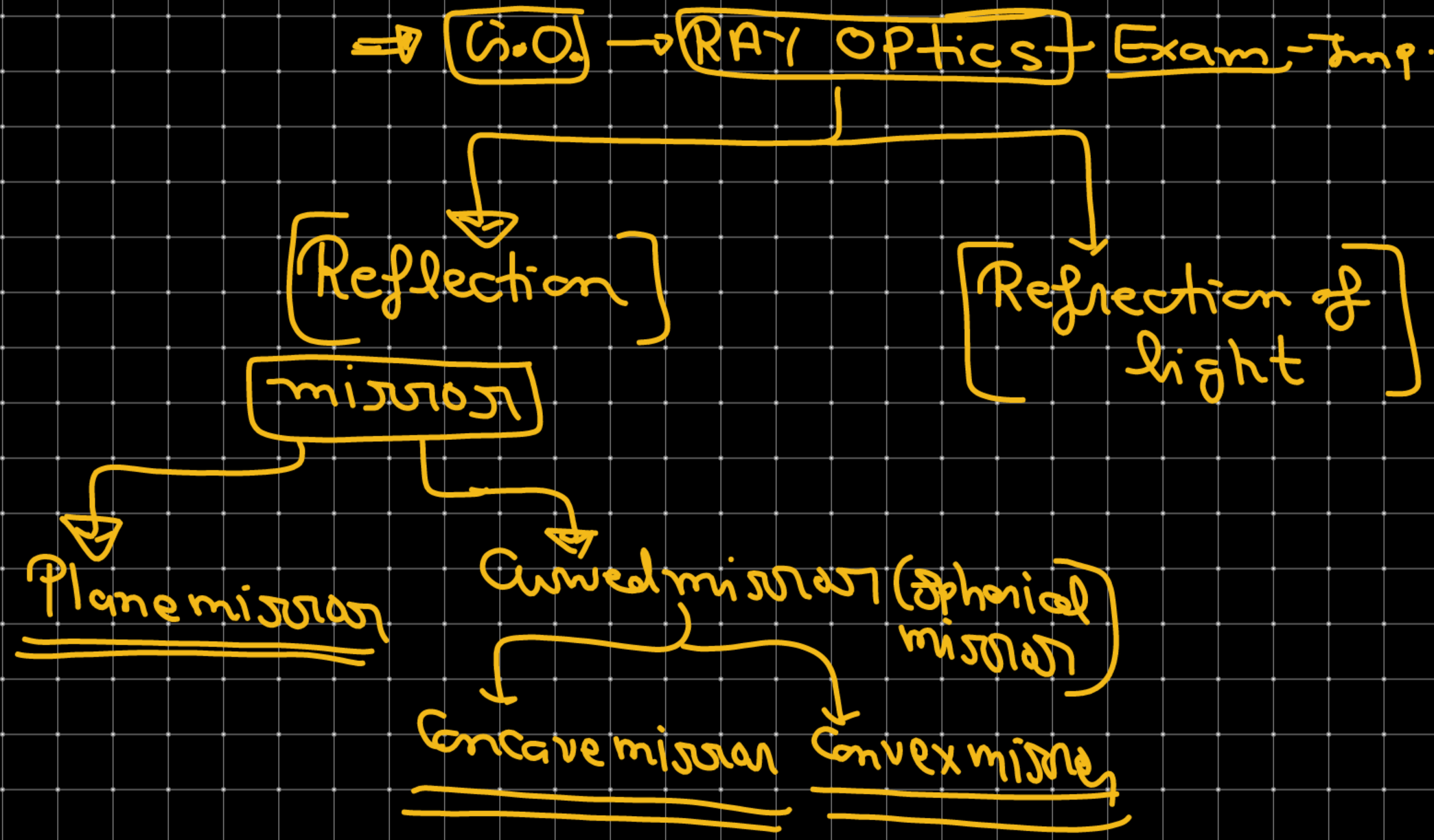

G.O.
RAY OPTICS
Exam - Imp.
Reflection
Refraction of light
mirror
Plane mirror
Curved mirror (Spherical mirror)
Concave mirror
Convex mirror

⇒ light → Path → St -line.

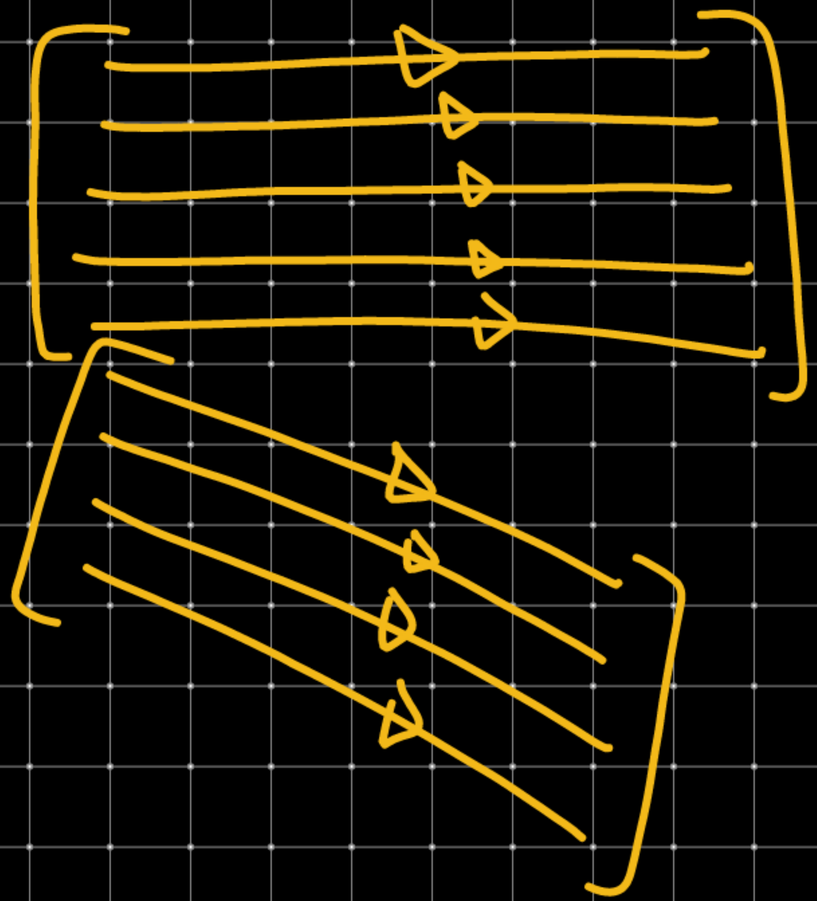
⇒ speed 3×10^8 m/s.

⇒ Object :

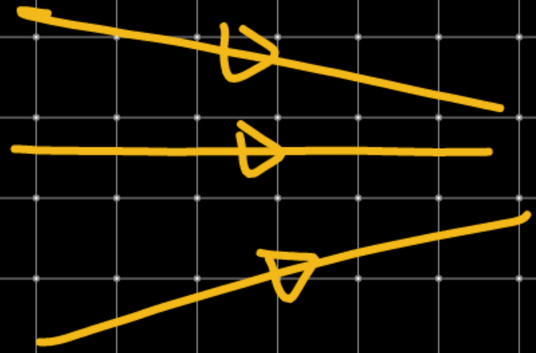
Image :

⇒ Type of Ray -1

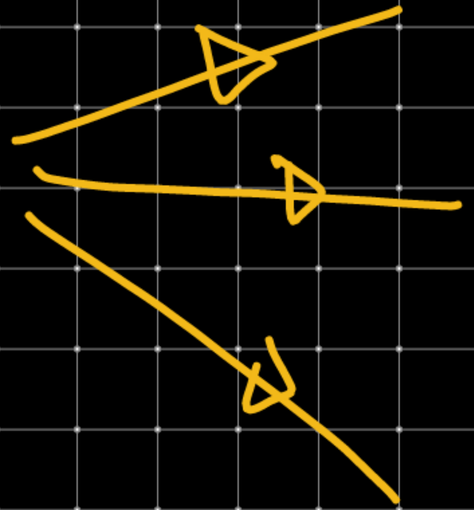
(i) Parallel Ray



(ii) Converging Ray.



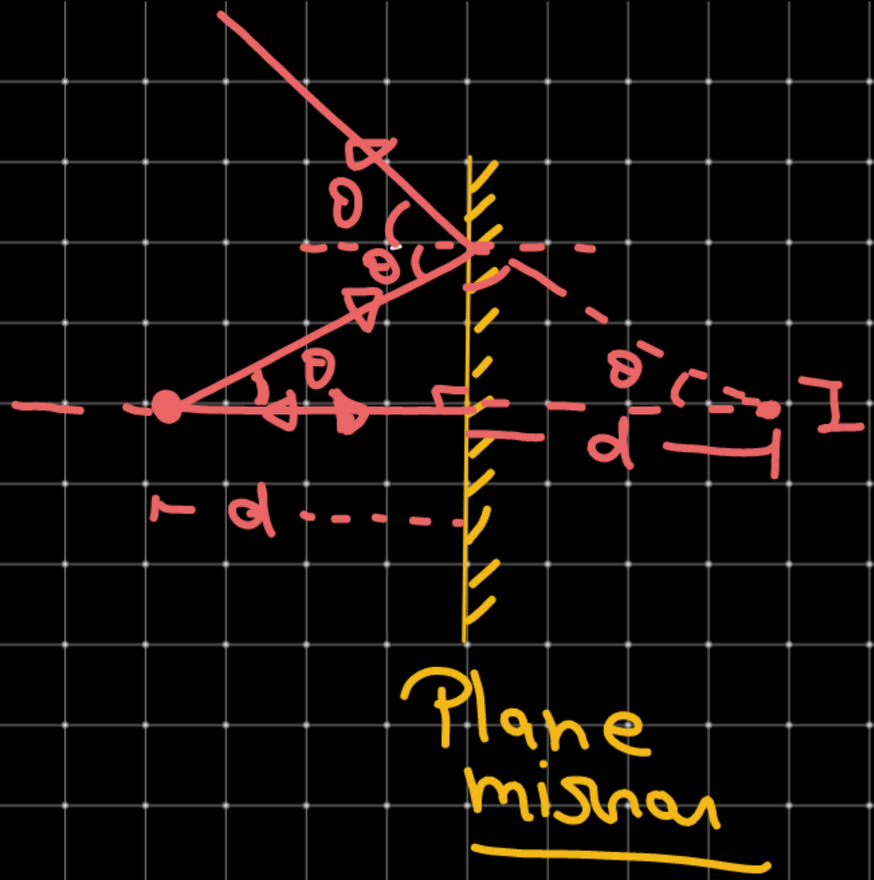
(iii) diverging RAY



Object :-

Where light originated in Real sence or virtually.

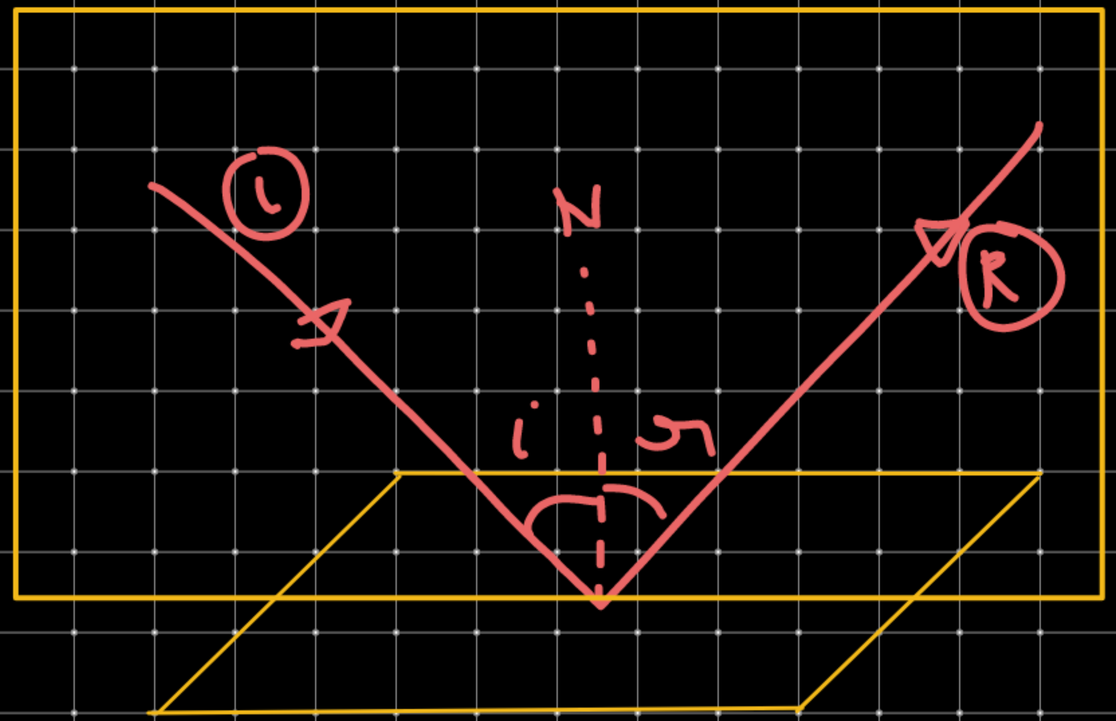
- Real object
- Virtual object

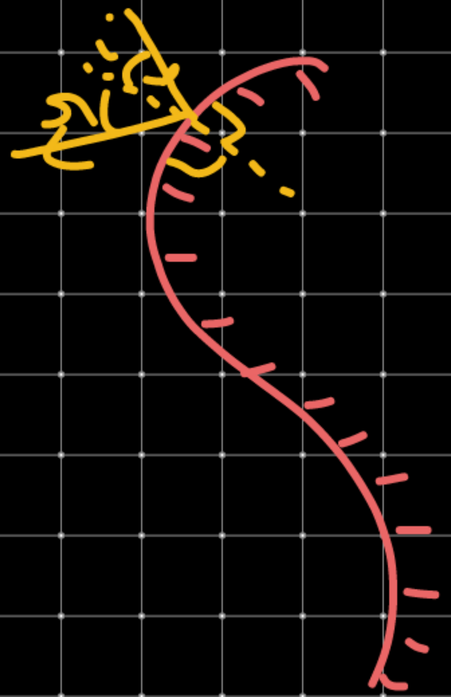

θ
θ
θ
d
I
d
Plane
mirror

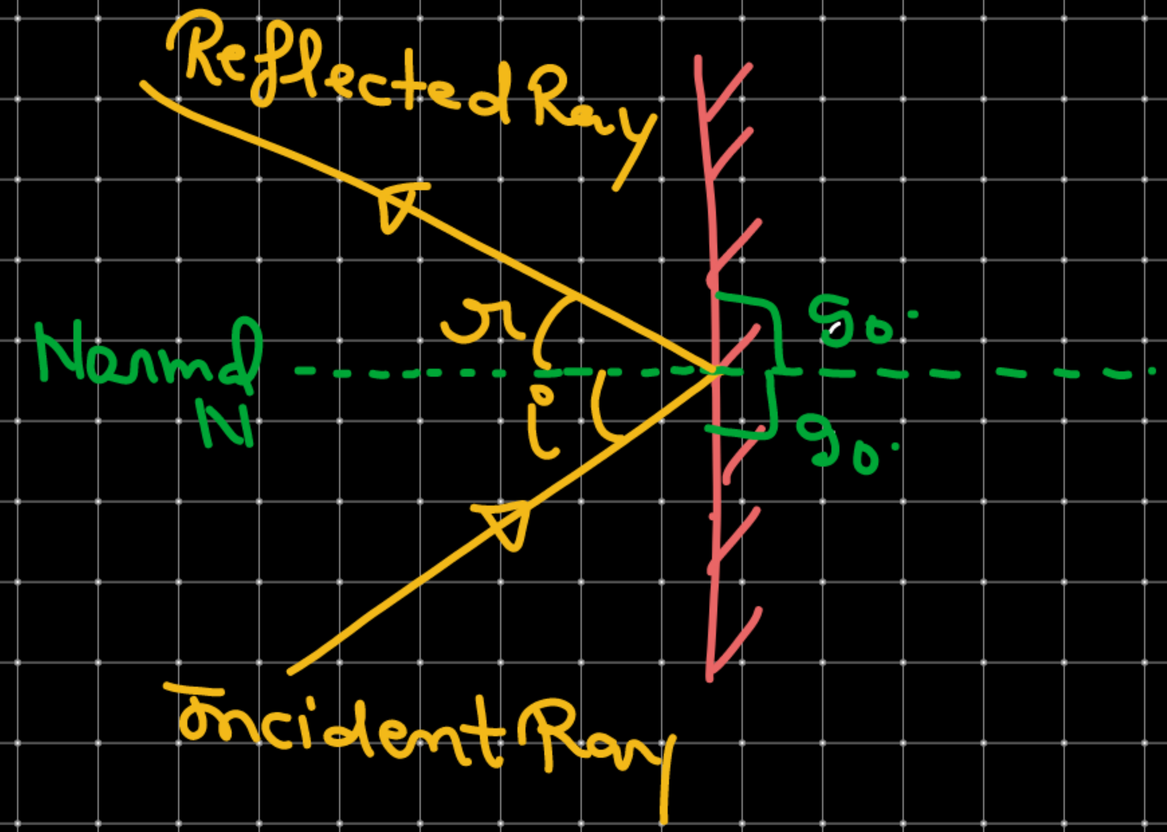
⇒ Law of reflection :-

(I) Incident Angle = Reflected Angle.

(II) Incident Ray, Reflected & Normal all lie in same plane.

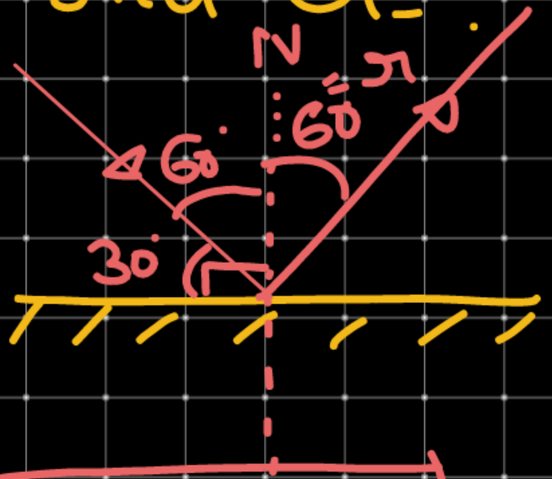

I
N
R
i
r





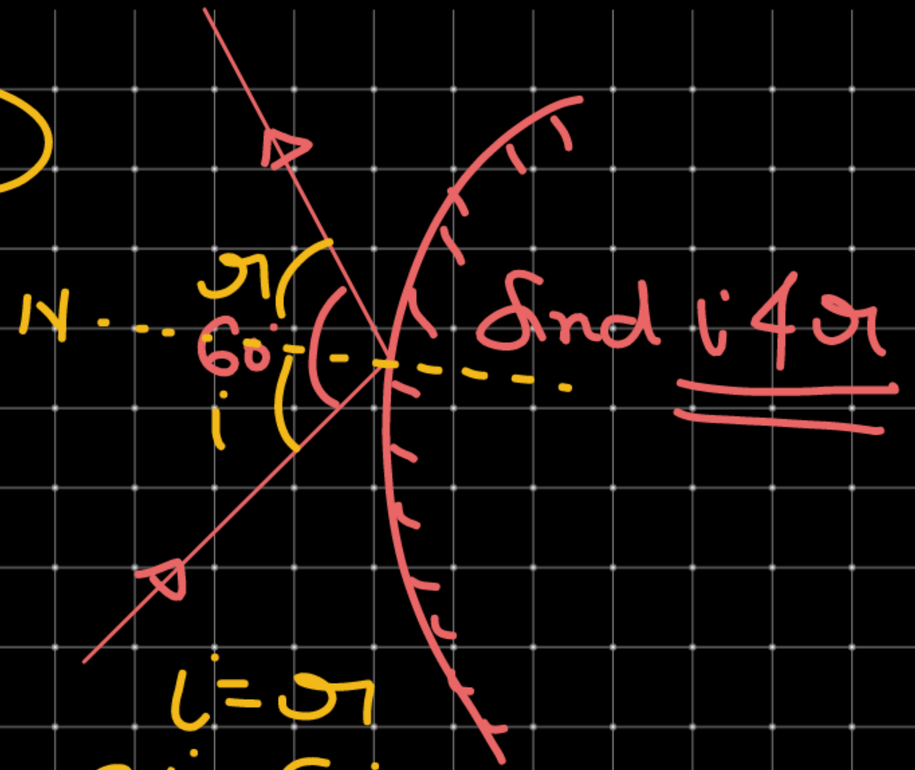
i = incident angle
r = reflected angle. $\angle i^\circ = \angle R.$

Q1 find $r = ?$



$i = 60° = r$

Q2

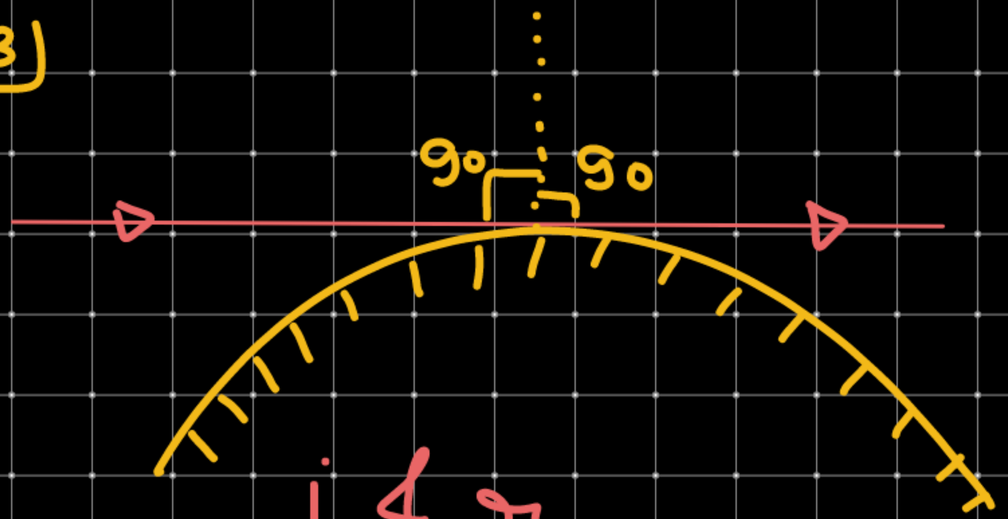


$i = r$

$2i = 60°$

$i = 30° = r$

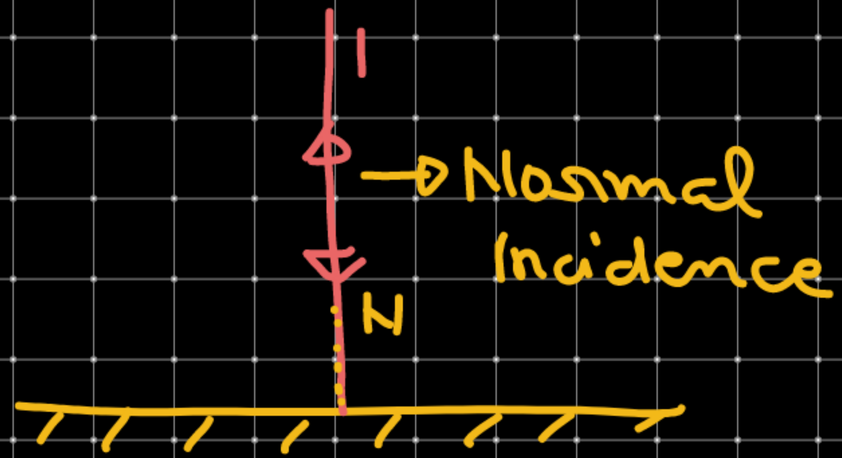
Q3)



$i \& r$

$i = r = 90° = \frac{\pi}{2}$

Q4)

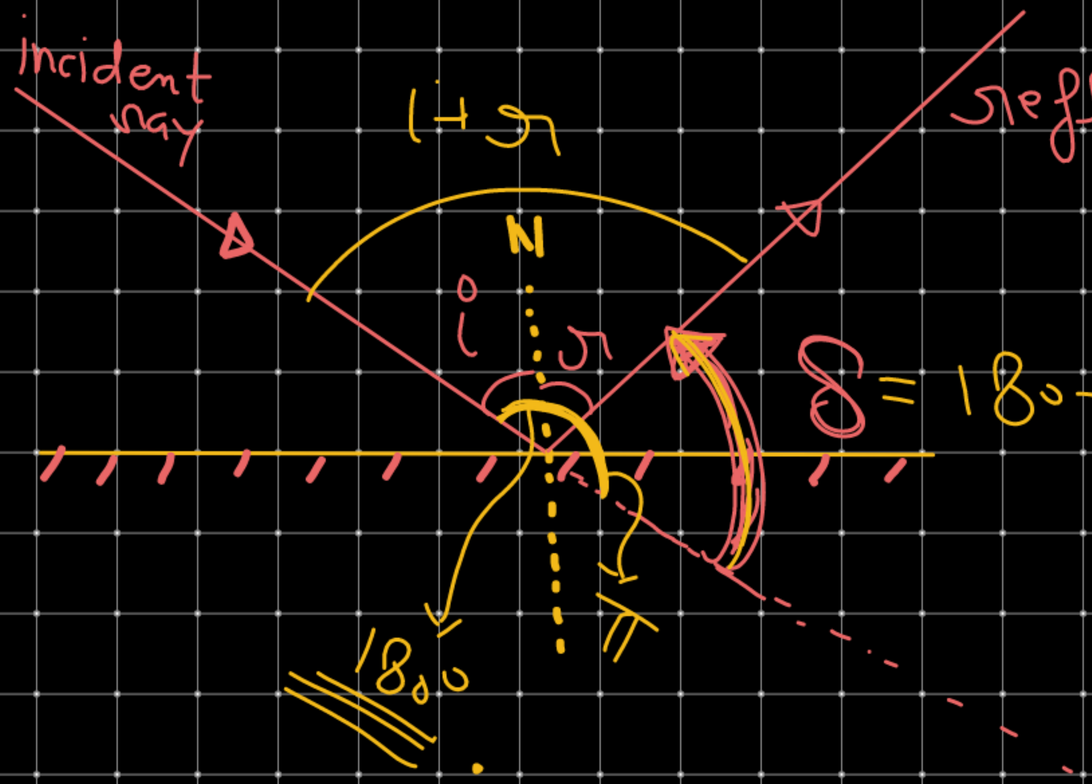


$i \& r = 0$

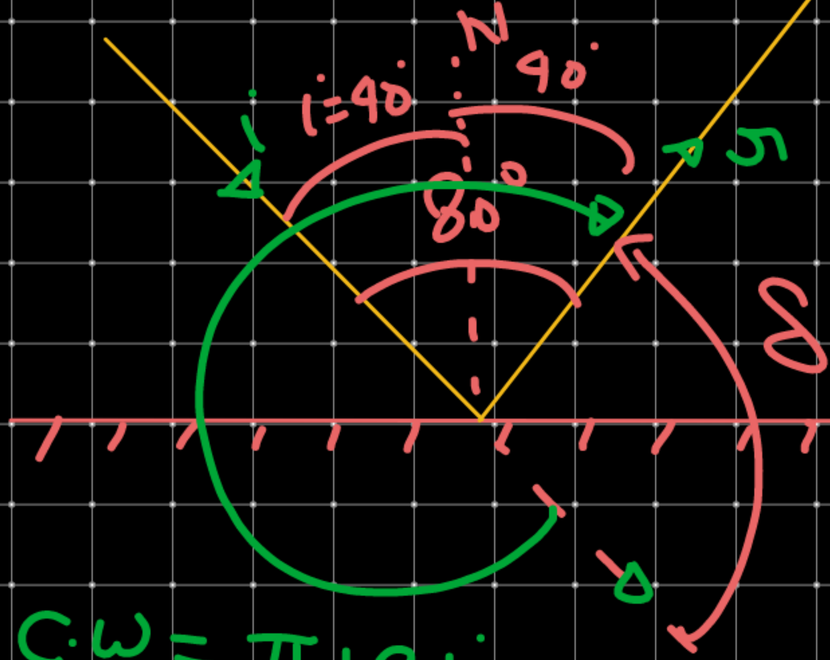
(#) Angle of deviation:- through plane mirror.

Deviation (δ) :- $i = r$

$$\delta = \pi - 2i \quad (A.C.W)$$
$$\delta = \pi - 2r$$



Q5) find deviation δ, if θ: 260° CW



C.W $= \pi + 2i$

$= 180 + 80$

$= 260°$ C.W

$\delta = \pi - 2i$

$= \pi - 2\theta$

$= 180 - 80 = 100°$ ACW

#1 $\delta = \pi - 2i = \pi - 2r$ [Acw] through plane mirror

↳ graph b/w δ & i

$\delta = -2i + \pi$

$\delta = -2i + \pi$

$y = mx + c$

[$\delta = 0$

$-2i + \pi = 0$

$\pi = 2i$

$i = \frac{\pi}{2}$

$[\delta \quad i]$

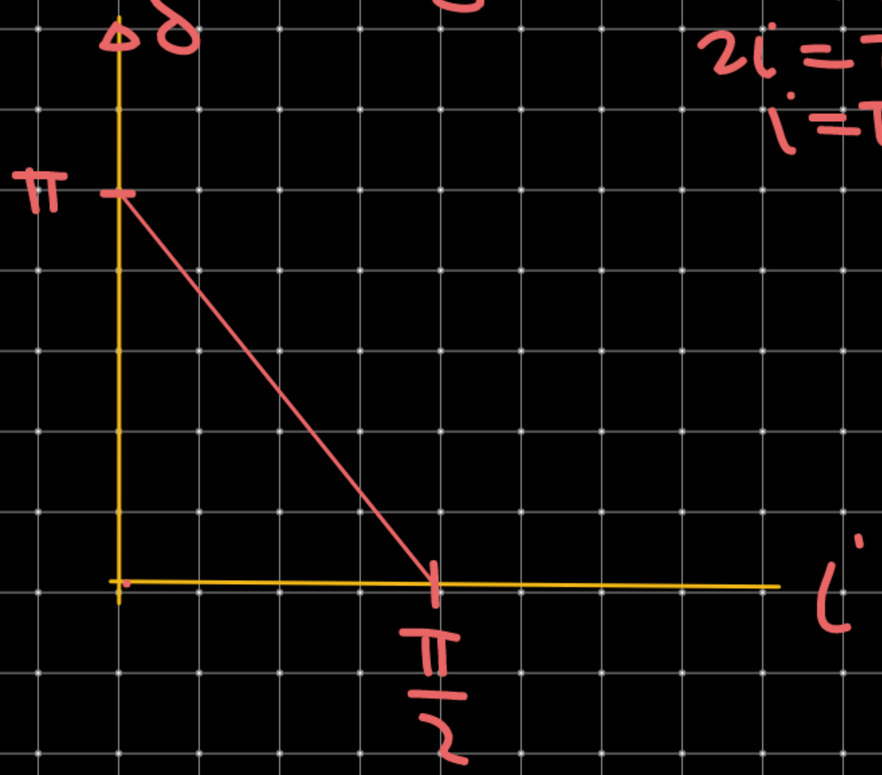
$\delta = mx + c$

$\delta = -2i + \pi$

$\delta = 0 \quad -2i + \pi = 0$

$2i = \pi$

$i = \pi/2$



$Y = mx + c$

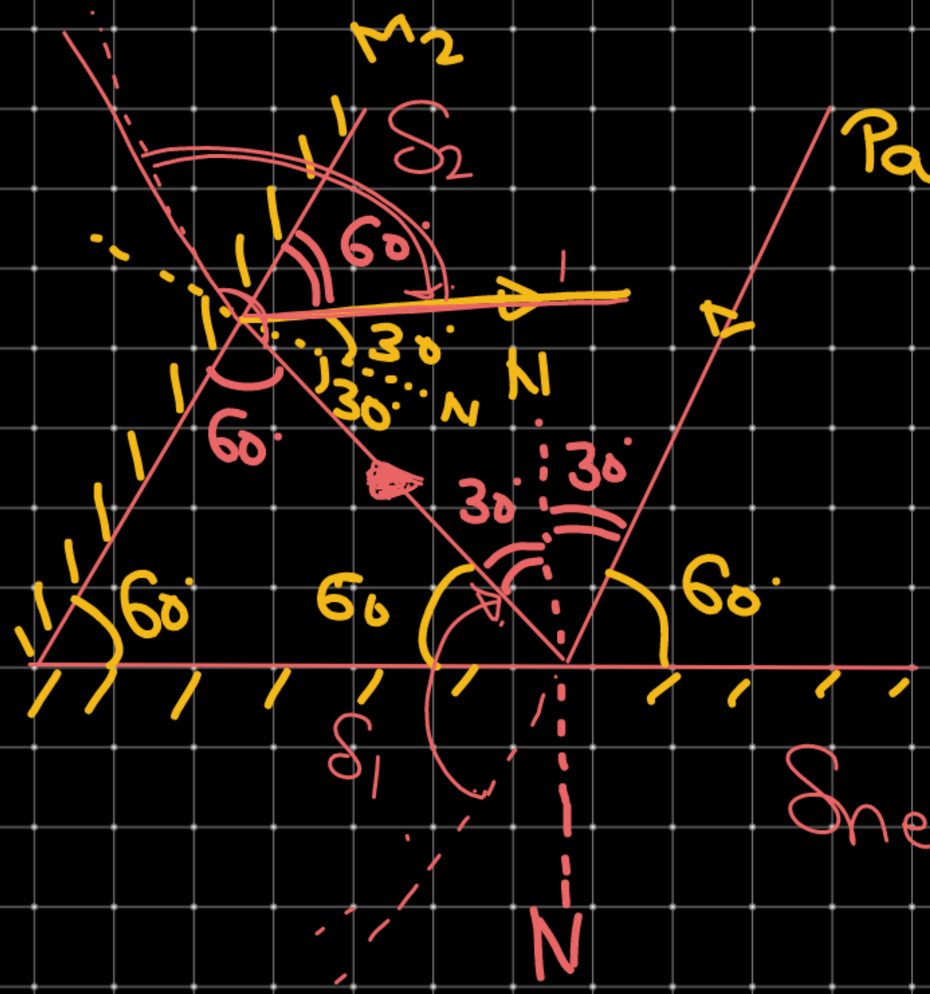
⇓

Eqn of st-line

c → Intercept

m = Slope.

Angle of deviation through Combination of mirrors:

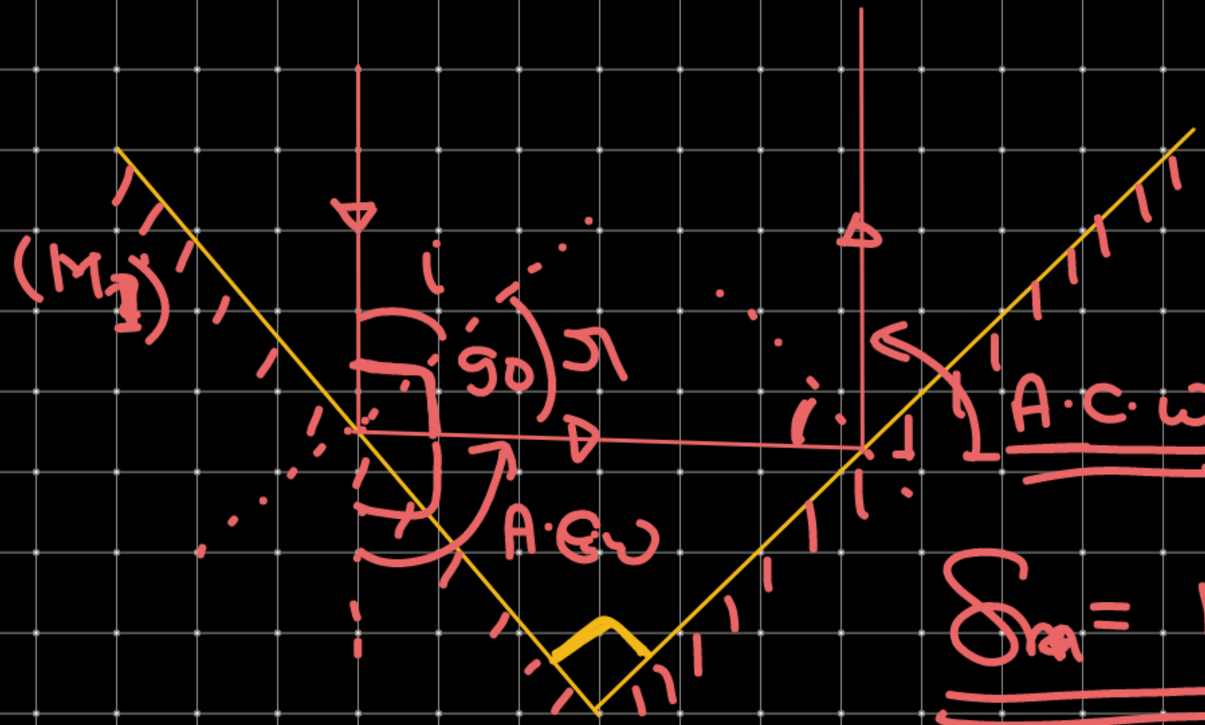


Parallel to M_2:
find net deviation of light.

$\delta_1 = 180 - 60 = 120°$ CW

$\delta_2 = 180 - 60 = 120°$ CW

$\delta_{net} = \delta_1 + \delta_2 = 240°$



If $\theta = 90°$

$i + i = 90$

$2i = 90$

$i = 45°$

$\delta_{max} = 180°$

(UPSEE) Asking

find if $\theta = ?$

& $\delta_{net} = ?$

(#) H.W

find angle of incidence.

Eddy Current