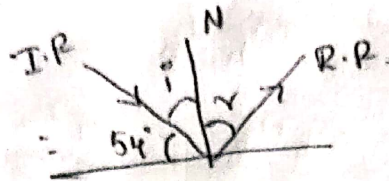


8th was by integrated

①

Thank

①



$$\text{Angle of incidence } Li = 90 - 54 \\ = 36^\circ$$

According to laws of reflection $Lr = Li = 36^\circ$

$$\therefore \text{Angle between incident and reflected ray} = Li + Lr \\ = 36 + 36 = 72^\circ$$

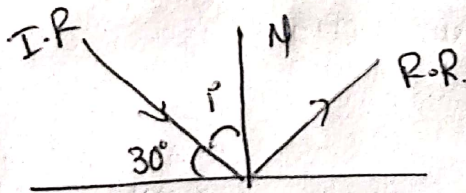
②

When two mirrors are facing with each other

$$\theta = 0^\circ$$

$$\text{No. of images } n = \frac{360}{\theta} = \frac{360}{0} = \infty$$

③



$$\text{Angle of incidence } Li = 90 - 30 \\ = 60^\circ$$

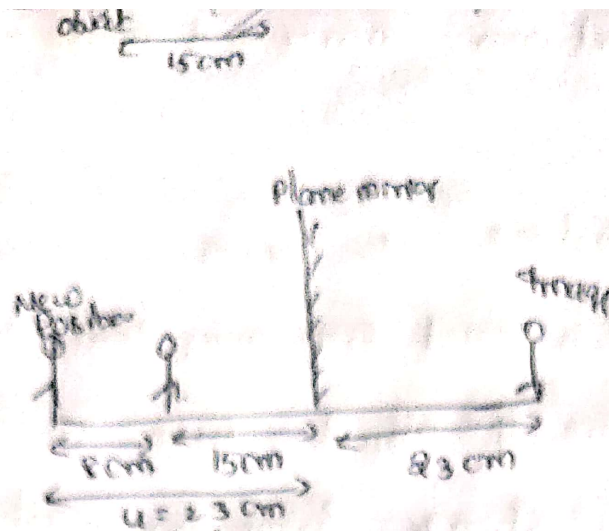
$$\text{Angle of reflection } Lr = Li = 60^\circ$$

Angle between incident and Reflected ray is

$$= Li + Lr = 60 + 60$$

$$= 120^\circ$$

⑥



Distance of object from mirror = Distance of image from mirror

image distance $v = 23 \text{ cm}$: object distance $= u = 23 \text{ cm}$

Distance between object and image $= u + v = 23 + 23 = 46 \text{ cm}$.

⑦

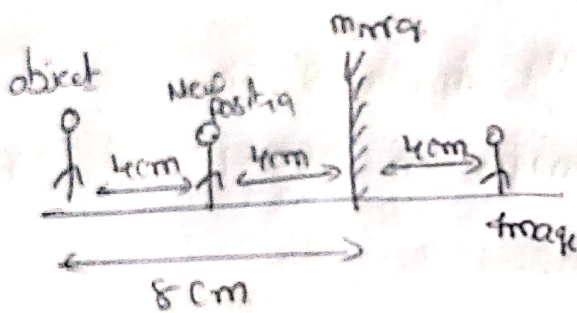


image distance $v = 4 \text{ cm}$

object distance $u = 4 \text{ cm}$

Distance between object and its image $= u + v = 4 + 4 = 8 \text{ cm}$

⑧

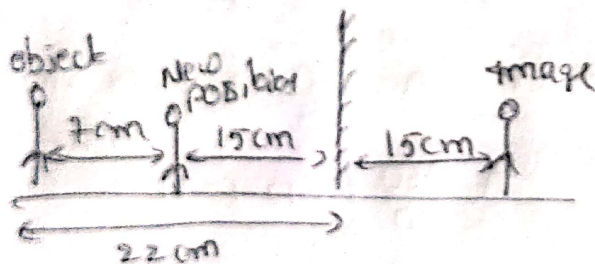
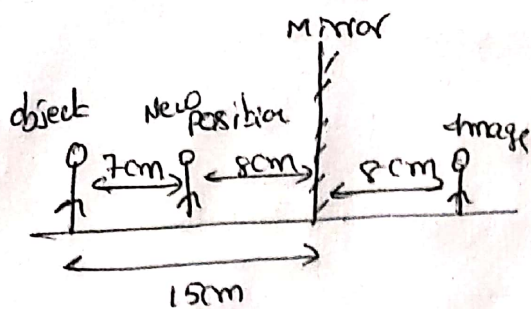


image distance $v = 15 \text{ cm}$

object distance $u = 15 \text{ cm}$

Distance between object and its image $= u + v = 15 + 15 = 30 \text{ cm}$

(9)



Object distance $u = 8 \text{ cm}$

Image distance $v = 8 \text{ cm}$

Distance between mirror and image $= v = 8 \text{ cm}$.

(10)

Object distance $u = 14 \text{ cm}$.

As the object is moved 6 cm away from the mirror.

New distance of object $= 14 + 6 = 20 \text{ cm}$.

A mirror always forms an inverted image which is at a distance same as that of object.

Image distance from mirror $= v = u = 20 \text{ cm}$

(14)

Angle between the mirrors $\theta = 60^\circ$

Number of images $n = \frac{360}{60} - 1 = 6 - 1 = 5$.

(16)

If angle between the mirrors $\theta = 30^\circ$

Number of images $n = \frac{360}{\theta} - 1$ [For symmetrical distribution]

$n = \frac{360}{30} - 1 = 12 - 1 = 11$

(3)

(17)

Number of images $n = 5$

$$n = \frac{360}{\theta} - 1$$

$$\Rightarrow 5 = \frac{360}{\theta} - 1 \Rightarrow 5 + 1 = \frac{360}{\theta}$$

$$\Rightarrow \theta = \frac{360}{6} = 60^\circ$$

(18)

distance of object from mirror $u = 10\text{cm}$ when the object is moved 4cm away from the mirror.then new distance $u' = 10 + 4 = 14\text{cm}$

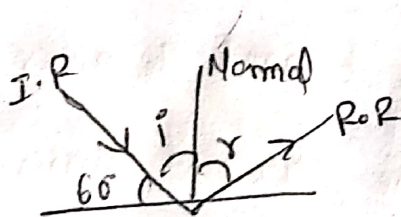
At plane mirror form inverted image. and image distance = object distance

$$\text{i.e. } v = u' = 14\text{cm}$$

Therefore distance between object and image $= u + v$

$$= 14 + 14 = 28\text{cm}$$

(19)

Angle of incidence $L_i = 90 - 60$

$$L_i = 30^\circ$$

 $\therefore$ According to laws of reflection $L_r = L_i = 30^\circ$ $\therefore$ The angle between incident ray and reflected ray

$$= L_i + L_r = 30 + 30 = 60^\circ$$

LTalk

SAT

①

$$\text{Time} = 500 \text{ sec.}$$

$$\text{speed} = 3 \times 10^5 \text{ km/s.}$$

we know that $\text{speed} = \frac{\text{distance}}{\text{time.}}$

$$\Rightarrow \text{distance} = \text{speed} \times \text{time.}$$

$$= 3 \times 10^5 \times 500$$

$$= 15 \times 10^7 \text{ km}$$

$$= 150 \times 10^6 \text{ km}$$

$$= 150 \text{ million km}$$

②

$$\text{Angle of incidence } L_i = 80^\circ$$

According to Laws of reflection $L_r = L_i = 80^\circ$

③

$$\text{Distance of image of car from mirror is } u = 29 \text{ cm}$$

As the car is moved 11 cm towards the mirror, then the distance between the car and mirror is $v = 29 - 11 = 18 \text{ cm}$

④

Given angle between the mirror $\theta = 30^\circ$

$$\text{Number of images } n = \frac{360}{\theta} - 1 = \frac{360}{30} - 1 =$$

$$n = 12 - 1$$

$$= 11.$$



⑥

Distance of object from plane mirror $u = 2\text{ m}$.

Then the distance of image $v = 2\text{ m}$.

As the object is shifted by 0.5 m away from the mirror

Then the new distance of object from mirror $u' = 2 + 0.5$
 $= 2.5\text{ m}$

$\therefore$ New distance of image from mirror $v' = 2.5\text{ m}$

$\therefore$ Distance between object and mirror $u = u' + v'$
 $= 2.5 + 2.5 = 5\text{ m}$

⑦

Distance of object from mirror $u = 10\text{ cm}$.

Image distance from mirror $v = 10\text{ cm}$.

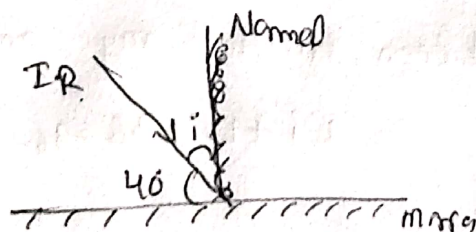
If the object is moved 4 cm away from the mirror.

Then new distance of the object $u = 10 + 4 = 14\text{ cm}$

Distance of image from mirror $v' = v + 4 = 10 + 4 = 14\text{ cm}$

Then the distance b/w object and mirror $= v + u$
 $= 14 + 14 = 28\text{ cm}$

⑧



Angle of incidence

$$Li = 90 - 40 = 50^\circ$$

According to law of reflection Angle of reflection $= Li$

$$Lr = 50^\circ$$

$\therefore$ Angle between incident ray and reflected ray
 $= Li + Lr = 50 + 50 = 100^\circ$

(13)

Distance of object from mirror = $u = 15 \text{ cm}$.

$\therefore$ Image distance $v = 15 \text{ cm}$.

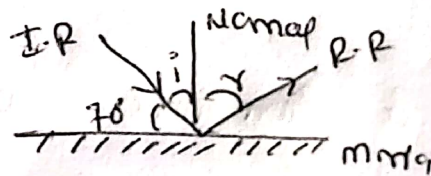
As the object is moved 2.5 cm toward the mirror.

Then distance of object $u' = u + 2.5 = 15 + 2.5 = 17.5 \text{ cm}$

Then the new distance of image $v' = u' = 17.5 \text{ cm}$.

$\therefore$ Distance between object and image $= u' + v' = 17.5 + 17.5 = 35 \text{ cm}$.

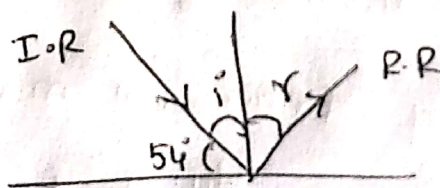
(14)



Angle of incidence $L_i = 90 - 70 = 20^\circ$

$\therefore$ Angle of reflection $= L_r = 20^\circ$

(16)



Angle of incidence $L_i = 90 - 54 = 36^\circ$

Angle between incident ray and reflected ray

$$= L_i + L_r = 36 + 36 = 72^\circ$$