

Measurement Of Angles Ex 4.1 Q11

Let AB be the rail road

$$\angle AOB = 25^0 = 25 \times \frac{\pi}{180} = \left[\frac{5\pi}{36}\right]^C \qquad \qquad \left[\because 1^0 = \left(\frac{\pi}{180}\right)^C\right]$$

We know that

$$\theta = \frac{\text{arc}}{\text{radius}}$$

$$\Rightarrow$$
 $\angle AOB = \frac{Ai}{O}$

$$\frac{5\pi}{36} = \frac{40}{r}$$

$$\Rightarrow r = \frac{40 \times 31}{5\pi}$$

$$\Rightarrow \qquad \angle AOB = \frac{AB}{OA}$$

$$\Rightarrow \qquad \frac{5\pi}{36} = \frac{40}{r}$$

$$\Rightarrow \qquad r = \frac{40 \times 36}{5\pi}$$

$$\Rightarrow \qquad r = \frac{288}{\pi} \text{ meter}$$

$$\Rightarrow$$
 $r = 91.64$ meter

$\pi = \frac{22}{7}$

Measurement Of Angles Ex 4.1 Q12

Let,
$$\angle AOB = \theta = 1'$$

$$AB = \operatorname{arc} AB = I$$

$$OA = OB = r = 5280m$$

$$\Rightarrow 1' = \left(\frac{1}{60}\right)^0 = \left(\frac{1}{60} \times \frac{\pi}{180}\right)^c$$

Now,

We know that

$$\theta = \frac{\text{arc}}{\text{radiu}}$$

$$\Rightarrow \qquad \left(\frac{\pi}{180 \times 60}\right)^c = \frac{l}{5280}$$

$$\Rightarrow l = \frac{5280\pi}{180 \times 60} = 1.5365 \text{ m}$$

$$\left[\because \pi = \frac{22}{7} \right]$$

Measurement Of Angles Ex 4.1 Q13

Since A wheel makes 360 revoulation in 1 minutes

 \therefore Wheel will make $\frac{360}{60}$ revolution in 1 secons

That is, 6 revoultin in1 second

Now,

In one revolutin the wheel makes 3600 angle

... In 6 revoulution the wheel will make 360° x 6 angles

$$=2160^{0}$$

$$\mathbf{1}^{0} = \left(\frac{\pi}{180}\right)^{c}$$

$$\therefore 2160^{0} = \left(\frac{2160}{180} \times \pi\right)^{c}$$
$$= 12\pi$$

Measurement Of Angles Ex 4.1 Q14

= 0.75 m

$$AB = \operatorname{arc} AB = 10 \text{ cm}$$

= 0.1 m

Also,

$$\theta = \frac{\text{arc}}{\text{radius}} \qquad ---(i)$$

$$\Rightarrow \qquad \theta = \frac{0.1}{0.75} = \left(\frac{2}{15}\right)^{c}$$

$$\theta = \frac{2}{15} \text{ radian}$$

From (A) $\theta = \frac{0.15}{0.75} = \frac{1}{5} \text{ radian}$ $\theta = \frac{1}{5} \text{ radian}$

(iii)
$$OA = 75 \text{ cm} = 0.75 \text{ m}$$
 $AB = 21 \text{ cm} = 0.21 \text{ m}$

From (A)

$$\theta = \frac{0.21}{0.75} = \frac{7}{25}$$

$$\theta = \frac{7}{25} \text{ radian}$$

Measurement Of Angles Ex 4.1 Q15

We have

$$OA = OB = \text{radius of circle} = 30 \text{ cm} = 0.3 \text{ m}$$

 $AB = \text{chord } AB = 30 \text{ cm} = 0.3 \text{ m}$
 $A\text{rc } AB = \widehat{AB} = I \text{(say)}$

Now,

 $\triangle AOB$ is equilateral triangle as OA = OB = AB = 30 cm

$$\angle AOB = 60^{0} = \frac{\pi}{3} \text{ radian.}$$

$$\theta = \frac{\text{arc}}{\text{radius}}$$

$$\Rightarrow \frac{\pi}{3} = \frac{l}{0.3}$$

$$\Rightarrow I = \frac{0.3}{3}\pi = 0.1\pi \text{ m}$$

 $\therefore I = \operatorname{arc} AB = 10\pi \text{ cm}.$