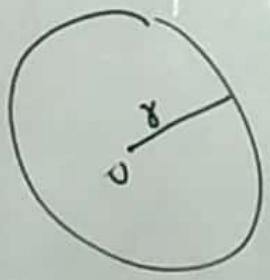
C-12

Area Related To Circle

1st Area of Circle

$A = \pi r^2$



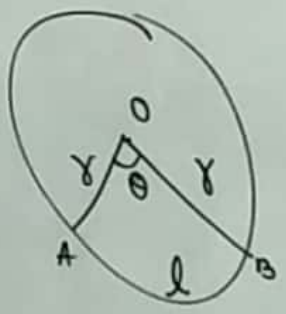
Circumference of Circle $C = 2\pi r$

OR

(Distance in 1 round)

Length of arc

I st

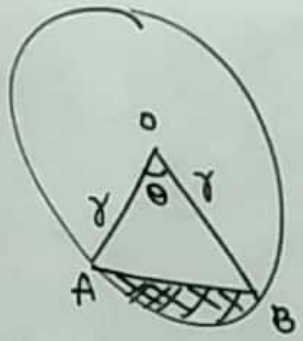


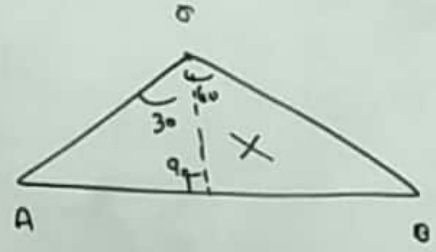
$l = \frac{2\pi r\theta}{360}$

IInd Area of Sector

$A = \frac{\pi r^2 \theta}{360}$

Area of Segment





= Area of Sector AOB − area of ΔAOB

$$= \frac{\pi r^2 \theta}{360} - \frac{1}{2} r^2 \sin\theta$$

Ex-12.1

(1) $r_1 = 19\text{cm}$

$r_2 = 9\text{cm}$

$C = C_1 + C_2$

$2\pi r = 2\pi r_1 + 2\pi r_2$

$r = r_1 + r_2$

$= 19 + 9$

$= 28\text{cm}$

(2) $r_1 = 8\text{cm}$

$r_2 = 6\text{cm}$

$A = A_1 + A_2$

$\pi r^2 = \pi r_1^2 + \pi r_2^2$

$r^2 = 8^2 + 6^2$

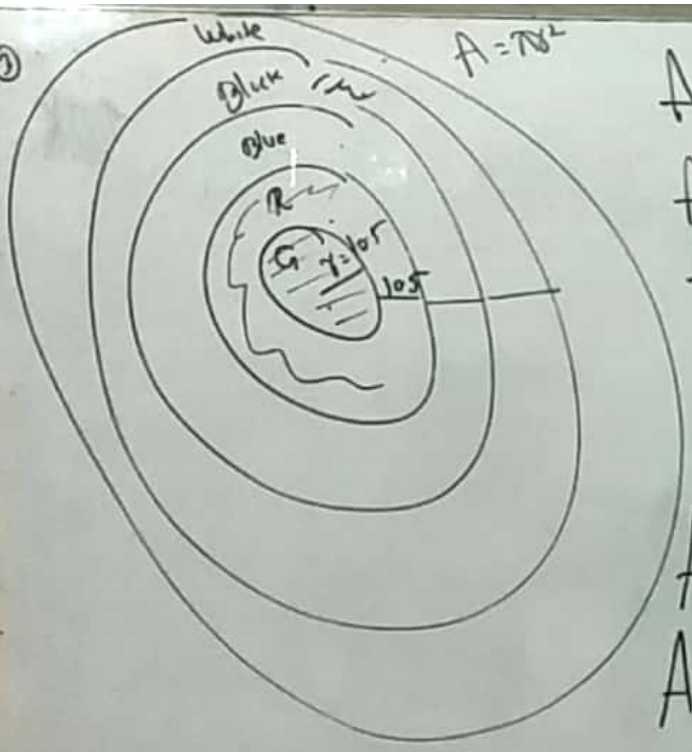
$= 64 + 36$

$= 100$

$r^2 = 10^2$

$r = 10$

③



$A = \pi r^2$

$A_1 = \frac{22}{7} \times 10.5^2$

$A_2 = \frac{22}{7} \times 21^2$

$A_3 = \frac{22}{7} \times 31.5^2$

$A_4 = \frac{22}{7} \times 42^2$

$A_5 = \frac{22}{7} \times 52.5^2$

$A_{Gold} = A_1$

$A_{Red} = A_2 - A_1$

$A_{Blue} = A_3 - A_2$

$A_{Black} = A_4 - A_3$

$A_{White} = A_5 - A_4$

(4) $r = \frac{80}{2} = 40cm = \frac{40}{100} = \frac{2}{5}m$

$t = 10min = \frac{10}{60}hr = \frac{1}{6}hr$

$v = 66 Km/hr$

$d = v \times t$

$= 66 \times \frac{1}{6} = 11 Km$

$= 11000m$

No. of Revolution $= \frac{\text{Total distance}}{2\pi r}$

$= \frac{11000}{2 \times \frac{22}{7} \times \frac{2}{5}}$

$= 4375$

5.

$r^2 = 2rx$

$r = 2x$ cm