Exercise 25.1

① Given data :-

Activities	sleep	school	home	play	others	Total
No. of hours	8	7	4	2	3	24

Total no. of hours = 24 hrs.

These total no. of hours are to be represented on a 360° circle.

let the contribution of each hour on pie-chart be $x°$.

∴ Total no. of hours = 24 hrs.

Total contribution = $24x°$

⇒ 360°

L.H.S = R.H.S.

$24x = 360°$

$x = \dfrac{360}{24}$

$\boxed{x = 15°}$

∴ Contribution of each hour spent on pie-chart is 15°.

∴ for

sleeping ⇒ $8x$ ⇒ 120°

school ⇒ $7x$ ⇒ 105°

home ⇒ $4x$ ⇒ 60°

play ⇒ $2x$ ⇒ 30°

others ⇒ $3x$ ⇒ 45°

∴ The pie chart is given as.

② Given data :-

Religion	Hindu	Muslim	Sikh	Christian	Total
No. of workers.	420	300	225	165	1080

Total no. of workers = 1080
These total no. of workers are to be represented
on a 360° circle.

let the contribution of each worker be $x°$ on pe chart.

Total no. of workers = 1080.

Total angle contribution = Total. no. of workers $\times$ contribution of each worker

$\Rightarrow$ 1080 x x

$\therefore$ Total angle contribution = 1080x —①

But total angle = 360° —②

①=②.

1080x = 360

$x = \frac{1}{3}°$

$\therefore$ Contribution of each worker on pie chart is $\frac{1}{3}°$.

$\therefore$ Contribution of Hindu workers = 420 x x

= 420 x $\frac{1}{3}$

Contribution of Hindu workers = 140°

Contribution of muslim workers = tot no. of workers x contribution of each worker

$\Rightarrow$ 300 x $\frac{1}{3}$
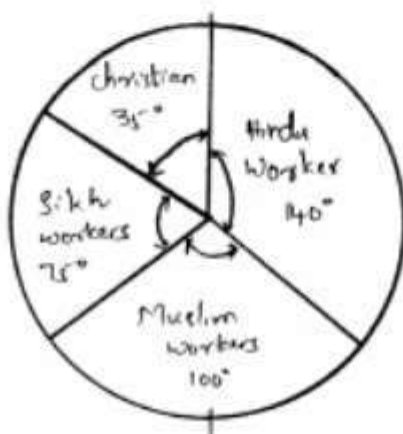
contribution of muslim workers = 100°

Similarly. Sikh workers $= 225 \times x$

$$= 225 \times \frac{1}{3}$$

Sikh workers $= 75°$

Christian workers $= 105 \times x$

$$= 105 \times \frac{1}{3}$$

Christian workers $= 35°$

∴ The pie chart is given as

③ Given data

Items	Ordinary bread	fruit bread	cakes & pastries	B.cuits	others	Total
			100	60	20	480.
Sales (Rs)	260	40				

Total value of sales in one day = 480 Rs

This total value is to be represented on a 360° circle

let the contribution of each rupee on pie chart

be $x°$.

Total value of sales = ₹ 480

∴ Total contribution of sales on pie chart

⇒ Total value × contribution of each rupee

⇒ 480 × x

⇒ 480x ———— ①

∴ But total angle. = 360° ⟶ ②

∴   ① = ②.

⟹ $480x = 360$

$x = \dfrac{360}{480}$

$x = \dfrac{3}{4}°$

∴ Contribution of each rupee on pie chart $= \dfrac{3}{4}°$.

∴

Contribution of ordinary bread sales on pie chart

⟹ sales × contribution of each rupee

⟹ $260 \times \dfrac{3}{4}$

= 195°.

Similarly contribution of

fruit bread $=$ sales × x

$= 40 \times \dfrac{3}{4}$

$= 30°$

cakes & pastries $= 100 \times x$

$= 100 \times \dfrac{3}{4}$

$= 75°$

Biscuits   =   sales of Biscuits × x (rupee contribution)

    = $60 \times \dfrac{3}{4}$

Biscuits   = $45°$

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Others   = sales values for others × rupee value

   = $20 \times x$

   = $20 \times \dfrac{3}{4}$

others   = $15°$

∴ The pie chart is given by
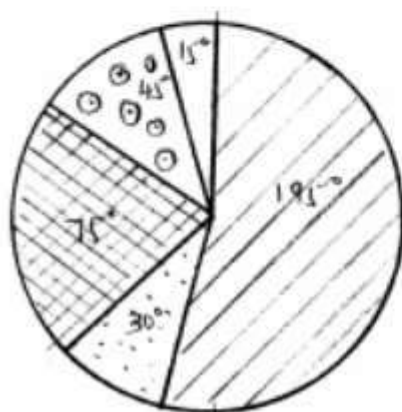
- $\square$ — ordinary bread
- $\boxtimes$ — cakes & pastries
- $\boxdot$ — fruit bread.
- $\boxed{\%}$ — Biscuits.
- $\square$ — others.