

Class - VII. Ch-08. Comparing Quantities.Ex-8.1

Q.1. Find ratio of:

(a) ₹ 5 to 50 paise.

Sol. We first convert both to same units.

$$\begin{aligned}\text{₹ } 5 &= 5 \times 100 \text{ paise} \\ &= 500 \text{ paise.}\end{aligned}$$

Now, required ratio;

$$\text{₹ } 5 : 50 \text{ paise}$$

$$= 500 \text{ p} : 50 \text{ p} \Rightarrow 500 : 50$$

$$= \frac{\cancel{500}^{10}}{\cancel{50}_1} = \frac{10}{1} = \underline{10:1} \text{ Ans.}$$

(b) 15 kg to 210 g.

We first convert both to same ratio or same units.

$$15 \text{ kg} = 15 \times 1000 = 15,000 \text{ g}$$

Now required ratio;

$$15 \text{ kg} : 210 \text{ g}$$

$$= 15000 \text{ g} : 210 \text{ g}$$

$$= 15000 : 210 \Rightarrow \frac{\overset{500}{\cancel{15000}}}{\cancel{210}_7} = \frac{500}{7}$$

$$= \underline{500:7} \text{ Ans.}$$

(c) 9m to 27cm.

We first convert both to same units.

$$9\text{m} = 9 \times 100 = 900\text{cm}.$$

Now required ratio;

$$9\text{m} : 27\text{cm}$$

$$= 900\text{cm} : 27\text{cm} = 900 : 27$$

$$= \frac{\cancel{900}^{100}}{\cancel{27}_3} = \frac{100}{3}$$

$$= \underline{100 : 3} \quad \underline{\text{Ans.}}$$

(d) 30 days to 36 hrs.

Sol. We first convert both to same units.

$$1\text{ day} = 24\text{ hrs.}$$

$$30\text{ days} = 30 \times 24 = 720\text{ hrs.}$$

Now, ratio,

$$30\text{ days} : 36\text{ hrs.}$$

$$= 720\text{ hrs} : 36\text{ hrs}$$

$$= 720 : 36$$

$$= \frac{\cancel{720}^{20}}{\cancel{36}_1} = \frac{20}{1}$$

$$= \underline{20 : 1} \quad \underline{\text{Ans.}}$$

Q.2. Sol. For 6 students number of computers in lab = 3.

Therefore, for 1 student number of computers needed = $\frac{3}{6}$.

and for 24 students, computers needed = $\frac{3}{6} \times 24 = 12$

Hence, 12 computers will be needed.

or,

If let required no. of computers for 24 students = x

Then, $3:6 = x:24$

$$\Rightarrow \frac{3}{6} = \frac{x}{24}$$

$$\Rightarrow 6x = 3 \times 24$$

$$\Rightarrow x = \frac{3 \times 24}{6} = \underline{12}$$

Hence, required no. of Comp. = 12 Ans

Q.3. Sol. (i) For Rajasthan;

Number of people in 3 lakh km^2
= 570 lakh.

Therefore, number of people in per km^2

$$= \frac{570}{3} = \underline{190}$$

Hence, number of people in Rajasthan is 190 per km^2 .

(ii) For UP;

Number of people in 2 lakh km^2

$$= \underline{1660 \text{ lakh}}$$

Therefore, number of people in

$$1 \text{ km}^2 = \frac{1660}{2} = \underline{830}$$

Hence, number of people (density) in UP is 830 per km^2 .

(iii) Rajasthan is less populated.

✓ Proportion: The ratios which are equivalent are said to be in proportion. Four numbers a, b, c, d are in proportion if product of means = product of extremes. ✓

$$\underbrace{a : b}_{\text{Means}} = \underbrace{c : d}_{\text{Extremes}} \Rightarrow \underline{\underline{a \times d = b \times c}}$$

✓ ✓