

EXERCISE 8.1

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1. Find the ratio of:**(a) ₹ 5 to 50 paise****Solution:-**

We know that,

$$₹ 1 = 100 \text{ paise}$$

Then,

$$₹ 5 = 5 \times 100 = 500 \text{ paise}$$

Now we have to find the ratio,

$$= 500/50$$

$$= 10/1$$

So, the required ratio is 10: 1.

(b) 15 kg to 210 g**Solution:-**

We know that,

$$1 \text{ kg} = 1000 \text{ g}$$

Then,

$$15 \text{ kg} = 15 \times 1000 = 15000 \text{ g}$$

Now we have to find the ratio,

$$= 15000/210$$

$$= 1500/21$$

$$= 500/7 \quad \dots [\because \text{divide both by 3}]$$

So, the required ratio is 500: 7.

(c) 9 m to 27 cm**Solution:-**

We know that,

$$1 \text{ m} = 100 \text{ cm}$$

Then,

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

Now we have to find the ratio,

$$= 900/27$$

$$= 100/3 \quad \dots [\because \text{divide both by 9}]$$

So, the required ratio is 100: 3.

(d) 30 days to 36 hours**Solution:-**

We know that,

$$1 \text{ day} = 24 \text{ hours}$$

Then,

$$30 \text{ days} = 30 \times 24 = 720 \text{ hours}$$

Now we have to find the ratio,

$$= 720/36$$

$$= 20/1 \quad \dots [\because \text{divide both by } 36]$$

So, the required ratio is 20: 1.

2. In a computer lab, there are 3 computers for every 6 students. How many computers will be needed for 24 students?**Solution:-**

From the question it is given that,

Number of computer required for 6 students = 3

$$\begin{aligned} \text{So, number of computer required for 1 student} &= (3/6) \\ &= \frac{1}{2} \end{aligned}$$

$$\begin{aligned} \text{So, number of computer required for 24 students} &= 24 \times \frac{1}{2} \\ &= 24/2 \\ &= 12 \end{aligned}$$

 \therefore Number of computer required for 24 students is 12 computers.**3. Population of Rajasthan = 570 lakhs and population of UP = 1660 lakhs.****Area of Rajasthan = 3 lakh km² and area of UP = 2 lakh km².****(i) How many people are there per km² in both these States?****(ii) Which State is less populated?****Solution:-**

(i) From the question, it is given that,

Population of Rajasthan = 570 lakh

Area of Rajasthan = 3 lakh Km²

$$\begin{aligned} \text{Then, population of Rajasthan in 1 km}^2 \text{ area} &= (570 \text{ lakh}) / (3 \text{ lakh km}^2) \\ &= 190 \text{ people per km} \end{aligned}$$

Population of UP = 1660 Lakh

Area of UP = 2 Lakh km²

$$\begin{aligned} \text{Then, population of UP in 1 lakh km}^2 \text{ area} &= (1660 \text{ lakh}) / (2 \text{ lakh km}^2) \\ &= 830 \text{ people per km} \end{aligned}$$

(ii) By comparing the two states Rajasthan is the less populated state.

