Question 1. Find the ratio of:

(a) Rs. 5 to 50 paise

(b) 15 kg to 210 g

(c) 9 m to 27 cm

(d) 30 days to 36 hours

Answer: To find ratios, both quantities should be in same unit.

(a) Rs. 5 to 50 paise

$\Rightarrow$ 5 x 100 paise to 50 paise   [∵ Rs. 1 = 100 paise]

$\Rightarrow$ 500 paise to 50 paise

Thus, the ratio is = $\frac{500}{50} = \frac{10}{1}$ = 10 : 1

(b) 15 kg to 210 g

$\Rightarrow$ 15 x 1000 g to 210 g   [∵ 1 kg = 1000 g]

$\Rightarrow$ 15000 g to 210 g

Thus, the ratio is = $\frac{15000}{210} = \frac{500}{7}$ = 500 : 7

(c) 9 m to 27 cm

$\Rightarrow$ 9 x 100 cm to 27 cm   [∵ 1 m = 100 cm]

$\Rightarrow$ 900 cm to 27 cm

Thus, the ratio is = $\frac{900}{27} = \frac{100}{3}$ = 100 :3

(d) 30 days to 36 hours

$\Rightarrow$ 30 x 24 hours to 36 hours   [$\because$ 1 day = 24 hours]

$\Rightarrow$ 720 hours to 36 hours

Thus, the ratio is = $\frac{720}{36} = \frac{20}{1}$ = 20 : 1

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

Answer: 6 students needed = 3 computers
Therefore 1 student needs = $\frac{3}{6}$ computers
24 students needs = $\frac{3}{6}$ times 24 = 12 computers
Thus, 12 computers will be needed for 24 students.

Question 3. Population of Rajasthan = 570 lakhs and population of U.P. = 1660 lakhs. Area of Rajasthan = 3 lakh km^2 and area of U.P. = 2 lakh km^2.

(i) How many people are there per km^2 in both states?

(ii) Which state is less populated?

Answer: (i) People present per km^2 = $\frac{\text{Population}}{\text{Area}}$

In Rajasthan = $\frac{570 \text{ lakhs}}{3 \text{ lakhs km}^2}$ = 190 people per km^2

In U.P. = $\frac{1660 \text{ lakhs}}{2 \text{ lakh km}^2}$ = 830 people per km^2

(ii) Rajasthan is less populated.