

1) The following table shows the population and area of 2 villages.

Village	Population	Area (sq. km)
A	1950	15
B	1700	25

- What is the density of population of Village A?
- What is the density of population of Village B?
- What is the average density of population in the 2 villages?

Solution:

a) For village – A,

Population = 1950

Area = 15 sq. km

We know,

$$\begin{aligned}\text{Population density} &= \frac{\text{Population}}{\text{Area}} \\ &= \frac{1950}{15} \text{ People / sq. km} \\ &= 130 \text{ People / sq. km}\end{aligned}$$

Ans: 130 People / sq. km.

b) For village – B,

$$\text{Population} = 1700$$

$$\text{Area} = 25 \text{ sq. km}$$

We know,

$$\begin{aligned}\text{Population density} &= \frac{\text{Population}}{\text{Area}} \\ &= \frac{1700}{25} \text{ People / sq. km} \\ &= 68 \text{ People / sq. km}\end{aligned}$$

Ans: 68 People / sq. km.

c) Total population of the two villages = (1950 + 1700) = 3650

$$\begin{aligned}\text{Total area of the two villages} &= (15 + 25) \text{ sq. km} \\ &= 40 \text{ sq. km}\end{aligned}$$

∴ The average density of population in the two villages

$$\begin{aligned}&= \frac{3650}{40} \text{ People / sq. km} \\ &= 91.25 \text{ People / sq. km} \\ &= 92 \text{ People / sq. km}\end{aligned}$$

Ans: 92 People / sq. km.

2) Village [A] has 550 people in the area of 50 square km, and Village [B] has 320 people in the area of 20 square km.

a. What is the population density in the village [A]?

b. What is the population density in the village [B]?

c. In which village population density is more?

Solution:

a) For village [A],

$$\text{Population} = 550$$

Area = 50 sq. km

We know,

$$\begin{aligned}\text{Population density} &= \frac{\text{Population}}{\text{Area}} \\ &= \frac{550}{50} \text{ People / sq. km} \\ &= 11 \text{ People / sq. km}\end{aligned}$$

Ans: 11 People / sq. km.

b) For village [B],

Population = 320

Area = 20 sq. km

We know,

$$\begin{aligned}\text{Population density} &= \frac{\text{Population}}{\text{Area}} \\ &= \frac{320}{20} \text{ People / sq. km} \\ &= 16 \text{ People / sq. km}\end{aligned}$$

Ans: 16 People / sq. km.

c) Since the population density of village [B] is more than that of village [A]

∴ Population density of Village [B] is more than Village [A].

Ans: Village [B].

3) Village – A has 550 people in the area of 50 sq. km and village – B has the area of 20 sq. km and population density is 16 people / sq. km.

a. Write the formula of population density.

b. Determine the population density of village – A.

c. Determine the population of village – B.

d. Determine the difference between the populations of two villages.

Solution:

a) Population density = $\frac{\text{Population}}{\text{Area}}$

b) For village – A,

$$\text{Population} = 550$$

$$\text{Area} = 50 \text{ sq. km}$$

We know,

$$\begin{aligned} \text{Population density} &= \frac{\text{Population}}{\text{Area}} \\ &= \frac{550}{50} \text{ People / sq. km} \\ &= 11 \text{ People / sq. km} \end{aligned}$$

Ans: 11 People / sq. km.

c) For Village – B,

$$\text{Area} = 20 \text{ sq. km}$$

$$\text{Population density} = 16 \text{ People / sq. km}$$

We know,

$$\text{Population} = \text{Population density} \times \text{Area}$$

$$= (16 \times 20) \text{ people}$$

$$= 320 \text{ people}$$

Ans: 320 people.

d) Village – A has 550 people

From 'c' we get,

Village – B has 320 people

∴ Difference between the population of two villages = $(550 - 320)$ People

$$= 230 \text{ people}$$

Ans: 230 people.

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