



Class-5

Subject-Mathematics

Chapter-13 (Data Arrangement)

Date: 02/11/2020

Lecture- 03

Population: The total number of persons inhabiting a country, city, or any district or area.

According to the survey conducted in 2011, the population of Bangladesh is about 14 crore 23 lac. Table A shows the population in 7 divisions, and Table B shows the population of neighboring Asian countries.

Table A:

Population by Sex and Division (thousand)

Division	Male	Female
Barisal	4,006	4,140
Chittagong	13,763	14,316
Dhaka	23,814	22,915
Khulna	7,782	7,781
Rajshahi	9,183	9,146
Rangpur	7,824	7,840
Sylhet	4,882	4,925
Bangladesh	71,254	71,063

Source: Population & Housing Census 2011

Table B:

Population of neighboring countries in 2010

Country	Population
Thailand	6 crore 18 lac
Myanmar	5 crore 5 lac
Sri Lanka	2 crore 4 lac
Bangladesh	14 crore 23 lac
India	121 crore 45 lac
Malaysia	2 crore 79 lac
Nepal	2 crore 99 lac
Pakistan	18 crore 48 lac
Singapore	48 lac

Source: State of the world population 2010, UNFPA; Population & Housing Census 2011

Population density: Population density is a measurement of the number of people in an area.

Formula:

- 1) Population density = $\frac{\text{Population}}{\text{Area}}$
- 2) Population = Population density \times Area
- 3) Area = $\frac{\text{Population}}{\text{Population density}}$

Unit of population density: People / Square Km

Unit of Area: Square Km

Example – 1: 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. In which village population density is more?

Solution:

For village [A],

$$\text{Population} = 550$$

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

We know,

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

For village [B],

$$\text{Population} = 320$$

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

We know,

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

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].

Example – 2: The following table shows the population, area and density of several divisions.

Division	Population (thousands)	Area (sq. km)	Density (people per sq. km)
Barisal	8,146	13,297	613
Chittagong	28,079	33,771	831
Dhaka	46,729	31,120	1,502
Khulna	15,563	22,272	699
Rajshahi	18,329	18,197	1,007
Rangpur	15,664	16,317	960
Sylhet	9,807	12,596	779
Bangladesh	142317	147,570	964

1) Which division has –

- i. the largest population?**
- ii. the largest area?**
- iii. the largest density of population?**

2) The population in Khulna is more than Sylhet but its population density is smaller than that of Sylhet. Discuss the reason.

3) In which division can one person occupy more land?

Solution:

1) According to the given data,

- i. Division of Dhaka has the largest population.
- ii. Division of Chittagong has the largest area.
- iii. Division of Dhaka has the largest population density.

2) Population density of a certain region / place depends on the size of population of that region / place. The area of Khulna division is greater than that of Sylhet division whereas population of Khulna is greater but not proportionately greater than Sylhet. That's why, density of population of Sylhet is not greater than Khulna.

3) A table relating to division wise per capita land is made below:

Division	Population	Area (sq. km)	Area of land per capita
Barisal	8,146	13,297	1632 sq. m
Chittagong	28,079	33,771	1203 sq. m
Dhaka	46,729	31,120	665 sq. m
Khulna	15,563	22,272	1431 sq. m
Rajshahi	18,329	18,197	993 sq. m
Rangpur	15,664	16,317	1042 sq. m
Sylhet	9,807	12,596	1284 sq. m

From the above table, it is obvious that Barisal division has more land per capita.

Rough

For Barisal division,

$$\text{Area of land per capita} = \text{Area} \div \text{Population}$$

$$= (13297 \div 8146) \text{ sq. km}$$

$$= 1.632 \text{ sq. km}$$

$$= (1.632 \times 1000) \text{ sq. m } [\because 1 \text{ km} = 1000 \text{ m}]$$

$$= 1632 \text{ sq. m}$$

Exercise

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?

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.

- What is the population density in the village [A]?
- What is the population density in the village [B]?
- In which village population density is more?

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.

- Write the formula of population density.
- Determine the population density of village – A.
- Determine the population of village – B.
- Determine the difference between the populations of two villages.

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