



## STANDARD 7<sup>TH</sup>: CHAPTER 7

### Joint Bar Graph

#### Q1. Select all correct options

- Which of the following statements accurately describes the information depicted in a bar graph?
  - A bar graph uses horizontal bars to represent data.
  - A bar graph is most suitable for displaying trends over time.
  - The length of each bar in a bar graph represents the frequency or value of a category.
  - A bar graph is typically used to represent geographical data.
- In a bar graph, what do the horizontal bars typically represent?
  - Frequency
  - Categories
  - Time
  - Magnitude
- Which of the following types of data is most suitable for representation using a bar graph?
  - Continuous
  - Categorical
  - Ordinal
  - Geospatial
- What does the width of the bars in a bar graph represent?
  - Frequency
  - Magnitude
  - Time
  - None of the above
- Which of the following types of data is NOT suitable for representation using a bar graph?
  - Sales revenue for each month of the year
  - Number of cars of different colours in a parking lot
  - Temperature readings at different times of the day
  - Population density of different cities
- Which of the following statements is true regarding the interpretation of a bar graph?
  - Longer bars always indicate a higher value.
  - The sum of the lengths of all bars is equal to the total number of categories.
  - Bar graphs are only effective for displaying small datasets.
  - The width of the bars is irrelevant in interpreting the data.

7. In a bar graph representing the distribution of exam scores in a class, if the height of the "80-89" score range bar is 50 units and the height of the "90-100" score range bar is 30 units, what is the difference in frequency between the two score ranges?
  - a. 50 Units
  - b. 40 Units
  - c. 30 Units
  - d. 20 Units
  
8. In a bar graph representing the distribution of ages in a survey sample, if the height of the "18-25" age group bar is 30 units and the height of the "26-35" age group bar is 40 units, what is the difference in the frequency of the two age groups?
  - a. 40 units
  - b. 30 units
  - c. 20 units
  - d. 10 units
  
9. A bar graph displays the average temperatures of a city over four seasons. If the average temperature in Summer is  $30^{\circ}\text{C}$  and the average temperature in Winter is  $10^{\circ}\text{C}$ , what is the difference in temperature between Summer and Winter?
  - a.  $30^{\circ}\text{C}$
  - b.  $20^{\circ}\text{C}$
  - c.  $10^{\circ}\text{C}$
  - d. None of the above
  
10. A bar graph shows the scores of students in a class test. If the highest score is 90 and the height of the corresponding bar is 18 units, what is the scale used on the vertical axis?
  - a. 90 units
  - b. 18 units
  - c. 5 units
  - d. None of the above

**Q2. Solve the followings:**

1. A bar graph shows the number of customers served by a restaurant each day of the week. If the total number of customers served in a week is 1500 and the height of the "Monday" bar is 200 units, what percentage of customers were served on Monday?

2. The percentage of literate people in the states of Maharashtra and Gujarat are given below. Draw a joint bar graph for this data.

State   Year	2019	2020	2022	2023	2024
Maharashtra	49%	53%	42%	60%	50%
Gujarat	51%	47%	58%	40%	50%

3. From question 2, solve the following:
- What is the total increase in the percentage of literate people in Maharashtra from 2019 to 2024?
  - If the percentage of literate people in Gujarat increased by 5% from 2020 to 2024, what would be the percentage in 2024?
  - If the percentage of literate people in Maharashtra remained constant from 2020 to 2022, what was the percentage in 2021?
4. From question 2, solve the following:
- In which year did Gujarat have a higher percentage of literate people compared to Maharashtra?
  - In which year did Maharashtra and Gujarat have the same percentage of literate people?
  - Which state has the highest percentage of literate people from 2019 to 2024 with the given data between Maharashtra and Gujarat.
5. The rainfall (in millimetres) in three cities A, B and C are given below over the five years. Draw a joint bar graph for this data.

City   Year	2019	2020	2022	2023	2024
City A	100 mm	80 mm	120 mm	105 mm	100 mm
City B	80 mm	100 mm	70 mm	120 mm	130 mm
City C	120 mm	110 mm	80 mm	120 mm	100 mm

6. From question 5, solve the following:
- In which year did City A experience the highest average annual rainfall?
  - If the annual rainfall in City B for the year 2024 decreased by 10 millimetres for 2025, what would be the annual rainfall for City B in 2025?
  - If the annual monthly rainfall in City A for 2019 year was 120 millimetres and was increased by 10% from 2018, what was the annual rainfall for the city C in 2018?

7. The numbers of children vaccinated in one day at the government hospitals in Mumbai and Pune are given in the table. Draw a joint bar graph for this data.

City	D.P.T. (Booster)	Polio (Booster)	Measles	Hepatitis
Mumbai	650	620	655	639
Pune	89	87	95	87

8. From question 7, solve the following:
- In which vaccination category did Pune hospital vaccinate the least number of children?
  - How many more children were vaccinated for Polio (Booster) at Mumbai hospital compared to Pune hospital?
  - If the number of children vaccinated for Hepatitis at Mumbai hospital increased by 50, how many children would be vaccinated for Hepatitis at Mumbai hospital?
9. From question 7, solve the following:
- Generate a joint bar diagram for two days such that the second day is increased by 5% in Mumbai and 5% decrease in Pune.
10. In a bar graph representing the sales revenue of a company's products over five years, if the revenue for Year 1 is INR 500,000 and the height of the corresponding bar is 100 units, what is the scale used on the vertical axis?