Drawing Graphs

Understanding of Drawing Graphs

- A graph is a visual representation of the relationship between two variables.
- We use coordinate axes to plot points and join them according to the situation.
- Graphs help in understanding patterns, comparisons, and solving real-world problems.

Important Points

- Draw the x-axis (horizontal) and y-axis (vertical) on graph paper.
- Mark equal divisions along both axes.
- Label the axes properly (x and y).
- Plot the given points correctly by locating their (x, y) coordinates.
- Join the points using straight lines or curves depending on the nature of the data.

Examples with Solutions

Example: Plot Simple Points

Plot (2, 3), (4, 5), and (6, 7) on the graph.

Solution: Locate each point using x and y values and mark them.

Example: Graph of y = 2x

 \succ Draw the graph of y = 2x for x = 0, 1, 2, 3.

Solution: Table:

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x = 0 \rightarrow y = 0
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$$x = 1 \rightarrow y = 2$$

$$x = 2 \rightarrow y = 4$$

$$x = 3 \rightarrow y = 6$$

Plot points (0,0), (1,2), (2,4), (3,6) and join with a straight line.



Example: Graph of y = x + 1

➤ Draw the graph of y = x + 1 for x = -2, -1, 0, 1, 2.

Solution: Table:

 $x = -2 \rightarrow y = -1$

 $x=-1 \rightarrow y=0$

 $x = 0 \rightarrow y = 1$

 $x = 1 \rightarrow y = 2$

 $x = 2 \rightarrow y = 3$

Plot points and join them in a straight line.

Example: Graph Showing Constant Value

➢ Plot y = 3 for x = −2, 0, 2, 4.

Solution: For all values of x, y = 3

Plot (-2,3), (0,3), (2,3), (4,3) and join to form a horizontal line.

Example: Real–life Graph Example

- > Distance-time graph for a car moving at constant speed:
- If distance increases steadily by 20 km every hour, plot points (0,0), (1,20), (2,40), (3,60) and join them by a straight line.

Summary Points

- Always draw neat and clearly labeled axes.
- Take equal divisions on both axes.
- Plot points carefully according to coordinates.
- Join the points properly according to the question.
- Graphs help visualize relationships easily.