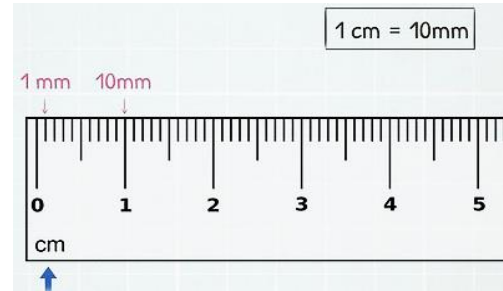


Measuring Line Segments

Introduction

- A line segment is a straight path between two points that has a definite length.
- To measure a line segment, we find how long it is between its two endpoints.
- Standard units of measurement include:
 - Centimeters (cm)
 - Millimeters (mm)
- A ruler or a measuring tape is often used for measurement.
- Knowing how to measure accurately is important in geometry, construction, and other activities.



How to Measure a Line Segment:

i. Place the Ruler or Measuring Tool:

- Align the zero mark on the ruler with one endpoint of the segment.

ii. Read the Measurement at the Other Endpoint:

- Look at the mark where the second endpoint falls.

iii. Use Appropriate Units:

- If the segment length is short, measure in millimeters or centimeters.
- For longer segments, use meters.

iv. Estimate Partial Units if Needed:

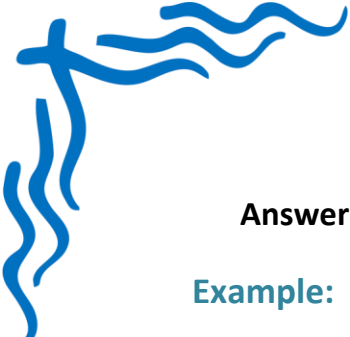
- If the endpoint falls between two marks, estimate to the nearest fraction of a unit (e.g., $4\frac{1}{2}$ cm).

Examples with Solutions:

Example:

Problem: A line segment AB starts at 0 cm and ends at 5 cm on a ruler. How long is AB?

Solution: Measure from 0 to 5.



Answer: AB is 5 cm long.

Example:

Problem: A line segment CD starts at 2 cm and ends at 6 cm. How long is CD?

Solution: Subtract: $6\text{ cm} - 2\text{ cm} = 4\text{ cm}$.

Answer: CD is 4 cm long.

Example:

Problem: A line segment EF measures from 3 cm to $7\frac{1}{2}$ cm. What is its length?

Solution: Subtract: $7\frac{1}{2}\text{ cm} - 3\text{ cm} = 4\frac{1}{2}\text{ cm}$.

Answer: EF is $4\frac{1}{2}$ cm long.

Example:

Problem: A line segment GH starts at the 1 cm mark and ends at the 8 cm mark. How long is GH?

Solution: Subtract: $8\text{ cm} - 1\text{ cm} = 7\text{ cm}$.

Answer: GH is 7 cm long.

Example:

Problem: A line segment IJ begins at $4\frac{1}{2}$ cm and ends at 9 cm. How long is IJ?

Solution: Subtract: $9\text{ cm} - 4\frac{1}{2}\text{ cm} = 4\frac{1}{2}\text{ cm}$.

Answer: IJ is $4\frac{1}{2}$ cm long.

Summary Points:

- Measure a line segment using a ruler, aligning one endpoint at zero.
- Subtract the starting measurement from the ending measurement to find the length.
- Always note the unit (e.g., cm, mm).
- Practice measuring accurately and estimating partial units if necessary.