Point, Line Segment

Introduction:

Point:

- A point is a location in space.
- It has no size, length, or width.
- Represented by a dot (e.g., •) and named with a capital letter, like A or B.
- Points are used to mark positions, corners, or intersections.

Line Segment:

- A line segment is a part of a line that has two endpoints.
- It has a definite length.
- Represented as a straight path between two points (e.g., A and B) and written as AB.
- Used to connect two points or measure distances.

Difference Between Points and Line Segments:

- A point has no length; it's just a position.
- A line segment has length and connects two points.

How to Recognize Points and Line Segments:

Point: Look for a single dot labeled with a capital letter.

Line Segment: Find two dots (points) connected by a straight line.

Examples with Solutions:

Example:

Problem: Identify the points and line segments in the figure below.

- ✓ Points: A, B, C (labeled dots)
- ✓ Line Segments: AB, BC (straight lines connecting points)

Answer: Points: A, B, C; Line Segments: AB, BC.



Example:

Problem: Draw a line segment connecting points D and E.

- ✓ Mark points D and E.
- ✓ Draw a straight line between them.

Answer: A line segment DE is formed.

Example:

Problem: Name the line segments in the figure below where points are labeled X, Y, and Z.

✓ Line segments: XY, YZ, and XZ.

Answer: XY, YZ, XZ.

Example:

Problem: If point P is between A and B, name all the line segments formed.

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✓ Points: A, P, B
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✓ Line segments: AP, PB, and AB.

Answer: AP, PB, AB.

Example:

Problem: How many line segments are formed if you connect 4 points A, B, C, and D in all possible ways?

✓ Possible line segments: AB, AC, AD, BC, BD, CD.

 \checkmark Total = 6 line segments.

Answer: 6 line segments.

Summary Points:

- A point shows a location, with no size or length.
- A line segment connects two points and has a fixed length.
- Multiple points can form multiple line segments.
- Practice naming, drawing, and identifying line segments and points to understand their differences and uses.