Introduction to Lines and Angles

Lines

Lines and angles are fundamental concepts in geometry. They help us understand shapes, directions, and structures around us.

• A line is a straight path that extends infinitely in both directions.

Types of Lines

1. Straight Line

A line that does not bend.

Example: A road, ruler edge.

2. Curved Line

A line that bends and does not remain straight.

Example: A flowing river path.

3. Line Segment

A part of a line with two fixed endpoints.

Example: The edge of a book.

4. Ray

A part of a line that has one endpoint and extends infinitely in one direction.

Example: Sunlight rays, laser beam.

Angles

An angle is formed when two rays meet at a common point called the vertex.

Parts of an Angle

- Arms: The two rays forming the angle.
- Vertex: The common point where two rays meet.











Types of Angles

1. Acute Angle

An angle less than 90°.

Example: 30°, 60°.

• Real-life example: A pizza slice.

2. Right Angle

An angle exactly 90°.

Example: The corner of a book.

3. Obtuse Angle

An angle greater than 90° but less than 180°.

Example: 130°.

• Real-life example: The hands of a clock at 10:10.

90°

4. Straight Angle

An angle exactly 180°.

Example: A straight road.

5. Reflex Angle

An angle greater than 180° but less than 360°.

Example: 230°.

• Real-life example: The door when fully opened.

6. Complete Angle

An angle exactly 360°.

Example: The hands of a clock after one full round.

Relationship between Lines and Angles

- When two lines meet, they form an angle.
- Parallel lines never meet and form no angles.
- Perpendicular lines meet at 90° to form a right angle.







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Properties of Angles and Lines

- i. A straight line measures 180°.
- ii. The sum of angles around a point is 360°.
- iii. Vertically opposite angles are always equal.
- iv. If two lines are parallel, corresponding angles are equal.
- v. Perpendicular lines always form a right angle (90°).