

CHAPTER TEST: INTRODUCTION TO EUCLID'S GEOMETRY

Mathematics | Class IX (2026/EUCLID/09/NCERT/001)

Time: 1.5 Hours

Max. Marks: 33

GENERAL INSTRUCTIONS

- All questions are compulsory.
 - The question paper consists of **four sections: A, B, C, and D.**
 - Section A contains **5 Multiple Choice Questions (MCQs)** of **1 mark each.**
 - Section B contains **4 Short Answer Questions** of **2 marks each.**
 - Section C contains **4 Long Answer Questions** of **4 marks each.**
 - Section D contains **4 Concept-based Questions** of **1 mark each.**
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Section A: Multiple Choice Questions (1 Mark Each)

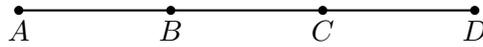
1. According to Euclid, a surface is that which has:
(a) Length only (b) Breadth only (c) Length and breadth only (d) Length, breadth and thickness
2. The number of dimensions a solid has is:
(a) 1 (b) 2 (c) 3 (d) 0
3. Axioms are assumed:
(a) Universal truths in all branches of mathematics (b) Universal truths specific only to geometry (c) Definitions (d) Theorems
4. "If equals are subtracted from equals, the remainders are equal." This statement is:
(a) Euclid's Postulate (b) Euclid's Axiom (c) A Definition (d) A Proof
5. The total number of Euclid's postulates is:
(a) 3 (b) 5 (c) 7 (d) 9

Section B: Short Answer Questions (2 Marks Each)

6. State Euclid's Postulate 1 and Postulate 3.
7. If a point C lies between two points A and B such that $AC = BC$, then prove that $AC = \frac{1}{2}AB$. Explain by drawing the figure. (NCERT Important)
8. Define the following terms:
(a) Parallel lines (b) Line segment
9. State the axiom used in the following: "If $x + y = 10$ and $x = z$, then $z + y = 10$."

Section C: Long Answer Questions (4 Marks Each)

10. Prove that an equilateral triangle can be constructed on any given line segment. (Provide steps of construction as per Euclid's logic).
11. In the given figure, if $AC = BD$, then prove that $AB = CD$. State the Euclid's axiom used here.



12. State Euclid's Fifth Postulate. Draw a diagram to explain the condition under which two lines will meet.
13. Consider the statement: "There exists a pair of straight lines that are everywhere equidistant from one another." Is this statement a direct consequence of Euclid's fifth postulate? Explain.

Section D: Concept Checklist (1 Mark Each)

1. A line has _____ length (breadthless/infinite).
2. The boundaries of a surface are _____ (points/lines).
3. Playfair's Axiom is an equivalent version of Euclid's _____ Postulate.
4. The edges of a surface are _____.

NCERT IMPORTANT HIGHLIGHTS

Board Exam Focus

Key areas from Chapter 5 of NCERT:

- **Axioms and Postulates:** Memorize the 7 Axioms and 5 Postulates exactly as stated.
- **Theorem 5.1:** Two distinct lines cannot have more than one point in common.
- **Equivalent versions of 5th Postulate:** Focus on the Playfair's Axiom and the concept of parallel lines.
- **Historical Context:** Be aware of the "Sri Yantra" and the "Sulba Sutras" for 1-mark theory questions.

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