

Euclid's Definitions and Axioms

Chapter 5: Introduction to Euclid's Geometry · Topic 1

Key Concept

One of Euclid's axioms states 'things which are equal to the same thing are equal to one another' (if $a=c$ and $b=c$, then $a=b$), a principle used constantly, even outside geometry, in logical reasoning and everyday problem-solving. Euclid's systematic approach — building an entire system of geometry from clearly stated definitions and self-evident axioms — became the model for mathematical rigour used throughout mathematics ever since, influencing how proofs are structured even today.

Quick Revision Notes

- Euclid defined basic terms: a point has no part, a line is breadthless length.
- Axioms are self-evident truths accepted without proof.
- Euclid's axiom example: 'things equal to the same thing are equal to one another.'
- Euclid's systematic approach became the model for mathematical rigour in later centuries.

Practice Questions

- 1 State one of Euclid's axioms.
- 2 Explain Euclid's definition of a straight line in your own words.
- 3 Give a real-life example that illustrates the axiom 'things equal to the same thing are equal to one another'.