Worksheet: Introduction to Euclid's Geometry

IGCSE · Class 9 · Mathematics · 12 questions · 26 marks

Name: _____ Date: _____ Score: _____ / 26

Q1. Is 'the whole is greater than the part' an axiom, a postulate, or a theorem? *[1 mark]*

Q2. Which postulate lets us extend a line segment indefinitely? *[1 mark]*

Q3. Name three undefined terms in geometry. *[1 mark]*

Q4. How many lines can pass through (a) one given point, (b) two distinct points? *[1 mark]*

Q5. True or false: 'Two distinct lines can intersect at more than one point.' Justify. *[1 mark]*

Q6. If AB = CD and CD = EF, prove that AB = EF. *[2 marks]*

Q7. If AB = CD, prove that AB + BC = BC + CD. *[2 marks]*

Q8. If C is the midpoint of segment AB, prove that AC = (1/2) AB. *[3 marks]*

Q9. State Euclid's Fifth Postulate and Playfair's Axiom. Show they are equivalent. *[3 marks]*

Q10. Prove that two distinct lines cannot have more than one common point. *[3 marks]*

Q11. Prove: If a point C lies between A and B on a line, then AC + CB = AB. Use the axioms. *[4 marks]*

Q12. Why was Euclid's Fifth Postulate considered controversial? Briefly describe non-Euclidean geometry. *[4 marks]*