# Worksheet: Introduction to Euclid's Geometry

Karnataka State Board · 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]*