

CLASS IX MATHEMATICS SAMPLE PAPER – 1

Time: 3 Hours **Maximum Marks:** 80

Instructions: Attempt all questions. Use appropriate constructions and show all working. Calculators are not allowed.

Section A – MCQs (10×1)

1. $\sqrt{2}$ is: (a) Rational (b) Irrational (c) Integer (d) Whole number
2. Degree sum of a triangle is ____.
3. Zero of polynomial $x+5$ is ____.
4. Value of $(a+b)^2$ identity contains ____.
5. Probability of a sure event is ____.
6. Number of diagonals in a quadrilateral is ____.
7. Median divides a triangle into ____.
8. 0.125 as fraction is ____.
9. Which is a linear equation in two variables?
10. Mean of 2,4,6,8.

Section B – VSA

11. Represent $\sqrt{5}$ on number line.
12. Factorise $x^2+7x+10$.
13. Solve $3x+5=20$.
14. State Euclid's first axiom.
15. Find area of parallelogram base 14 cm height 9 cm.

Section C – SA

16. Classify real numbers with examples.
17. Verify $(a+b)^2$ for $a=5, b=2$.
18. Solve linear equation pair graphically: $x+y=5$, $x-y=1$.
19. Find surface area of a cube of side 8 cm.
20. Draw histogram for suitable grouped data.
21. Prove vertically opposite angles are equal.

Section D – LA

22. A cylindrical water tank has radius 3.5 m and height 8 m. Find volume.
23. In a triangle, prove angle sum property.
24. A survey records marks of 40 students. Prepare frequency table and suitable graph.
25. A shopkeeper purchased goods for ₹12500 and sold them for ₹14850. Find profit percentage.

Section E – Case/HOTS

26. A park is designed using rectangles and semicircles. Calculate total area from suitable dimensions.
27. Explain why every rational number has a decimal expansion but not every decimal terminates.