

CLASS X MATHEMATICS SAMPLE PAPER – 1

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

Instructions: Attempt all questions. Show complete working. Calculators are not allowed.

Section A – MCQs (10×1)

1. HCF of 96 and 404 using Euclid's algorithm is ____.
2. Zeroes of x^2-5x+6 are ____.
3. Discriminant of x^2+4x+4 is ____.
4. $\sin^2\theta+\cos^2\theta =$ ____.
5. Distance between (2,3) and (5,7).
6. Probability of getting a head on one coin toss.
7. Number of tangents from an external point to a circle.
8. Surface area of a sphere formula.
9. AP: 3,7,11,... common difference.
10. Which pair is co-prime?

Section B – Very Short

11. Use Euclid's algorithm to find HCF of 255 and 867.
12. Factorise $x^2-9x+20$.
13. Solve $2x^2-7x+3=0$.
14. Evaluate $\tan 45^\circ$.
15. Find midpoint of (4,5) and (8,9).

Section C – Short

16. Prove $\sqrt{5}$ is irrational.
17. Find nth term of AP: 7,12,17,...
18. Solve pair: $x+y=9$, $x-y=3$.
19. A tower casts a shadow 20 m long. Angle of elevation is 45° . Find height.
20. Find area of sector of 90° in radius 14 cm.
21. Draw tangent to a circle from an external point.

Section D – Long

22. A cone has radius 7 cm and height 24 cm. Find curved surface area and volume.
23. Prove Basic Proportionality Theorem.
24. A bag contains coloured balls. Form probability questions based on suitable data.
25. A shopkeeper marked an item at ₹2500 and gave 12% discount. Find selling price and GST at 18%.

Section E – Case/HOTS

26. A park consists of a rectangle and two semicircles. Calculate total area.
27. Compare graphical and algebraic methods of solving linear equations with one example.