

CLASS X MATHEMATICS SAMPLE PAPER – 2

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

Instructions: Attempt all questions. Show complete working. Use of calculators is not permitted.

Section A – MCQs

1. The decimal expansion of $13/125$ is ____.
2. Sum of zeroes of $x^2-7x+10$.
3. Common difference of AP 12,9,6,...
4. $\cos 60^\circ =$
5. Distance between (1,2) and (7,10).
6. Number of tangents to a circle from an external point.
7. Probability of rolling 6 on a die.
8. CSA of cylinder formula.
9. Discriminant decides ____.
10. Which is irrational?

Section B – Very Short

11. Find HCF of 405 and 252 by Euclid's algorithm.
12. Solve $x^2-8x+15=0$.
13. Evaluate $\sin 30^\circ + \cos 60^\circ$.
14. Find section point dividing line joining (2,3) and (8,9) equally.
15. Write first five terms of AP with $a=5, d=4$.

Section C – Short

16. Prove $\sqrt{3}$ is irrational.
17. Solve: $2x+3y=13$ and $x-y=2$.
18. Find 20th term of AP 4,9,14,...
19. A tree casts a 12 m shadow at 60° elevation. Find height.
20. Find area of a quadrant of radius 21 cm.
21. Construct a pair of tangents from an external point.

Section D – Long

22. A solid consists of a hemisphere on a cylinder. Find total surface area and volume for suitable dimensions.
23. Prove that tangents drawn from an external point are equal.
24. The marks of 50 students are given. Prepare grouped frequency table and cumulative frequency.
25. An article marked ₹3600 is sold at 15% discount. Find selling price and GST payable at 18%.

Section E – HOTS/Case

26. A garden consists of a rectangle with four quarter circles at corners. Formulate and calculate total area.

27. Explain with example when graphical and algebraic solutions of linear equations coincide.