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CLASS 11

Mathematics

Chapterwise PYQs

13 sections | 26 questions | 2022, 2023, 2025

Previous school-examination questions

Selected and rewritten questions are grouped under the current chapters or course topics. Each question shows its examination year. A chapter appears only when a verified question is available.

Choose a chapter or topic

Mathematics		
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CHAPTER 1

Sets

Mathematics

1. 2023

List every subset of {1,2,3} and state the number of proper subsets.

2. 2022

Of 600 students, 150 drink tea, 225 drink coffee and 100 drink both. How many drink neither?

CHAPTER 2

Relations and Functions

Mathematics

3. 2025

Graph f(x)=2 for real x; give its domain and range.

4. 2023

Determine domain and range of $f(x)=\sqrt{(9-x^2)}$.

5. 2023

Find domain and range of g(x)=2+abs(x−1), where abs denotes absolute value.

CHAPTER 3

Trigonometric Functions

Mathematics

6. 2025

Prove tan(3x)tan(2x)tan(x)=tan(3x)−tan(2x)−tan(x), wherever defined.

7. 2023

Prove $\sin(2x)+2\sin(4x)+\sin(6x)=4\cos^2(x)\sin(4x)$.

8. 2022

A wheel completes 360 revolutions per minute. Find its angular displacement in radians per second.

CHAPTER 4

Complex Numbers and Quadratic Equations

Mathematics

9. 2025

Evaluate $(1+i)^6+(1-i)^3$ and find its complex conjugate.

CHAPTER 5

Linear Inequalities

Mathematics

10. 2025

Solve abs(x+1)+abs(x)>3, where abs denotes absolute value.

CHAPTER 6

Permutations and Combinations

Mathematics

11. 2025

Choose ten questions from sections containing six and seven questions, selecting at least four from each. Count the possible selections.

CHAPTER 7

Binomial Theorem

Mathematics

12. 2025

Expand and simplify $(a+b)^4-(a-b)^4$.

CHAPTER 8

Sequences and Series

Mathematics

13. 2025

Insert n arithmetic means between 1 and 31. The seventh and (n−1)th means have ratio 5:9. Find n.

14. 2023

The arithmetic and geometric means of a quadratic's roots are 8 and 5. Form the quadratic equation.

15. 2023

A GP's first two terms sum to −4 and its fifth term is four times its third. Find its first four terms.

16. 2022

A geometric progression has n terms, first term a, last term b and product P. Prove $P^2=(ab)^n$.

CHAPTER 9

Straight Lines

Mathematics

17. 2023

The line joining (h,3) and (4,1) is perpendicular to 7x−9y−19=0. Find h and the joining line.

18. 2023

Find lines through (3,2) inclined at 45° to x−2y=3.

CHAPTER 10

Conic Sections

Mathematics

19. 2025

For parabola $x^2=24y$, find its focus and latus-rectum length.

CHAPTER 11

Introduction to Three Dimensional Geometry

Mathematics

20. 2025

A square's opposite vertices are (1,−2,3) and (2,−3,5). Find its side length.

CHAPTER 13

Statistics

Mathematics

21. 2023

Find mean deviation about the median for values 15,21,27,30,35 with frequencies 3,5,6,7,8.

22. 2022

Find mean deviation about the mean for 3, 10, 10, 4, 7, 10, 5.

23. 2022

Calculate standard deviation of the first ten natural numbers.

24. 2022

Calculate variance of 6, 8, 10, 12, 14, 16, 18, 20, 22, 24.

25. 2022

Five observations have mean 4.4 and variance 8.24. Three are 1, 2 and 6. Find the other two.

26. 2025

Mutually exclusive events have probabilities 0.35 and 0.45. Find the probability that neither occurs.

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