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CLASS 9 MATHEMATICS - PRACTICE QUESTIONS

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CLASS 9

Mathematics

Sample Paper 3 - Questions

38 questions | 80 marks | 2026-27

Time: 3 hours. Answer all questions and subparts unless a choice is stated. Marks are shown on the right. Write answers on separate sheets. Independently prepared practice paper.

Section A - Objective questions

1. A GP has first term 27 and common ratio 3. Calculate term number 5. **1**
(A) 2189 (B) 2187 (C) 2186 (D) 2188

2. Calculate the distance between A(25, 27) and B(103, 131). **1**
(A) 130 (B) 131 (C) 132 (D) 129

3. In an isosceles triangle the vertex angle is 98 degrees. Calculate either equal base angle. **1**
(A) 42 (B) 43 (C) 40 (D) 41

4. Calculate the sum of the first 26 terms of the AP beginning 20, 22, 24. **1**
(A) 1170 (B) 1171 (C) 1172 (D) 1169

5. Calculate the mean of 20, 22, 24, 26, 28. **1**
(A) 25 (B) 23 (C) 26 (D) 24

6. The diagonals of a parallelogram intersect at O. If AO = 27 cm, find the full diagonal AC. **1**
(A) 53 (B) 55 (C) 54 (D) 56

7. A fair die is rolled. Calculate the probability that its result is at most 1. **1**
(A) 13/6 (B) 7/6 (C) -5/6 (D) 1/6

8. Factorise $x^2 + 27x + 72$. State the positive integer c such that $(x + 24)(x + c)$ is the factorisation. 1
(A) 2 (B) 3 (C) 4 (D) 5

9. A cylinder has radius 7 cm and height 25 cm. Calculate its volume using pi = 22/7. 1
(A) 3850 (B) 3851 (C) 3852 (D) 3849

10. Determine the value of $2^{28} / 2^{25}$. 1
(A) 10 (B) 7 (C) 8 (D) 9

11. A chord subtends 80 degrees at the centre. Calculate the angle it subtends at a point on the major arc. 1
(A) 41 (B) 42 (C) 40 (D) 39

12. In an isosceles triangle the vertex angle is 86 degrees. Calculate either equal base angle. 1
(A) 46 (B) 47 (C) 48 (D) 49

13. A hire shop charges Rs 35 plus Rs 11 per hour. Which is the charge for three hours? 1
(A) Rs 57 (B) Rs 68 (C) Rs 79 (D) Rs 116

14. The diagonals of a parallelogram intersect at O. If AO = 25 cm, find the full diagonal AC. 1
(A) 49 (B) 50 (C) 51 (D) 52

15. Calculate the distance between A(19, 21) and B(79, 101). 1
(A) 102 (B) 101 (C) 100 (D) 99

16. A cylinder has radius 7 cm and height 24 cm. Calculate its volume using pi = 22/7. 1
(A) 3696 (B) 3695 (C) 3698 (D) 3697

17. Calculate the mean of 24, 26, 28, 30, 32. 1
(A) 28 (B) 27 (C) 29 (D) 30

18. Calculate the sum of the first 29 terms of the AP beginning 23, 25, 27. 1
(A) 1481 (B) 1480 (C) 1479 (D) 1478

19. A fair die is rolled. Calculate the probability that its result is at most 4. 1
(A) 2/3 (B) 5/3 (C) -1/3 (D) 8/3

20. Factorise $x^2 + 29x + 100$. State the positive integer c such that $(x + 25)(x + c)$ is the factorisation. 1
(A) 6 (B) 5 (C) 4 (D) 3

Section B - Short responses

21. If a quadrilateral is a square, it is a rectangle. Write the converse and test it using a counterexample. 2

22. A chord subtends 76 degrees at the centre. Calculate the angle it subtends at a point on the major arc. 2

23. The diagonals of a parallelogram intersect at O. If AO = 23 cm, find the full diagonal AC. 2

24. A cylinder has radius 7 cm and height 23 cm. Calculate its volume using pi = 22/7. 2

25. Calculate the distance between A(23, 25) and B(95, 121). 2

Section C - Short responses

26. Calculate the sum of the first 32 terms of the AP beginning 26, 28, 30. Show the governing rule, substitution and conclusion clearly. 3

27. In an isosceles triangle the vertex angle is 94 degrees. Calculate either equal base angle. Show the governing rule, substitution and conclusion clearly. 3

28. Calculate the mean of 22, 24, 26, 28, 30. State the median and range, explaining how you identify each. 3

29. Factorise $x^2 + 22x + 40$. State the positive integer c such that $(x + 20)(x + c)$ is the factorisation. Show the governing rule, substitution and conclusion clearly. 3

30. A chord subtends 82 degrees at the centre. Calculate the angle it subtends at a point on the major arc. Show the governing rule, substitution and conclusion clearly. 3

31. Ten students have a mean score of 15 and twenty students have a mean score of 21. Calculate the mean of all thirty students and explain why the two group means should not receive equal weights. 3

Section D - Extended responses

32. Establish, with a proof, that the diagonals of a parallelogram bisect each other. State the equal angles and congruence criterion used. 5

33. For the data 4, 6, 6, 8, 11, find the mean, median and mode. Which of these changes if 11 is replaced by 21? 5

34. Establish, with a proof, that vertically opposite angles are equal. 5

35. Use Euclid's division algorithm to find the greatest common divisor of 99 and 63, showing every remainder. Explain why the common divisors are preserved at a division step. Hence find their least common multiple. 5

Section E - Case and application questions

36. A hall has 10 seats in its first row, with 4 more in each successive row. There are 15 rows.

(a) State the common difference. 1

(b) Find the final row's seating. 1

(c) Calculate the total seats. 2

37. Five observations are [5, 7, 9, 11, 13].

(a) Find their sum. **1**

(b) Find their mean. **1**

(c) Find their median and range, explaining each. **2**

38. A bag holds 7 red and 8 blue counters. One is drawn at random.

(a) State the total number. **1**

(b) Find the probability of red. **1**

(c) Find the probability of not red and explain your method. **2**

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