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CLASS 9 MATHEMATICS - PRACTICE QUESTIONS

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CLASS 9

Mathematics

Sample Paper 5 - 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. Calculate the mean of 38, 40, 42, 44, 46. **1**
(A) 41 (B) 44 (C) 43 (D) 42

2. Calculate the sum of the first 42 terms of the AP beginning 36, 39, 42. **1**
(A) 4094 (B) 4096 (C) 4097 (D) 4095

3. 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

4. A GP has first term 43 and common ratio 3. Calculate term number 6. **1**
(A) 10448 (B) 10449 (C) 10451 (D) 10450

5. A chord subtends 122 degrees at the centre. Calculate the angle it subtends at a point on the major arc. **1**
(A) 61 (B) 60 (C) 63 (D) 62

6. A cylinder has radius 7 cm and height 43 cm. Calculate its volume using pi = 22/7. **1**
(A) 6621 (B) 6624 (C) 6622 (D) 6623

7. The diagonals of a parallelogram intersect at O. If AO = 43 cm, find the full diagonal AC. **1**
(A) 86 (B) 87 (C) 88 (D) 85

8. Calculate the distance between A(36, 38) and B(147, 186). **1**
(A) 186 (B) 185 (C) 187 (D) 184

9. Determine the value of $2^{42} / 2^{39}$. **1**
(A) 10 (B) 9 (C) 7 (D) 8

10. In an isosceles triangle the vertex angle is 132 degrees. Calculate either equal base angle. **1**
(A) 26 (B) 25 (C) 24 (D) 23

11. Factorise $x^2 + 45x + 126$. State the positive integer c such that $(x + 42)(x + c)$ is the factorisation. **1**
(A) 3 (B) 4 (C) 5 (D) 2

12. A hire shop charges Rs 45 plus Rs 13 per hour. Which is the charge for three hours? **1**
(A) Rs 71 (B) Rs 84 (C) Rs 97 (D) Rs 148

13. Determine the value of $2^{40} / 2^{37}$. **1**
(A) 7 (B) 10 (C) 9 (D) 8

14. A fair die is rolled. Calculate the probability that its result is at most 2. **1**
(A) 4/3 (B) -2/3 (C) 7/3 (D) 1/3

15. A cylinder has radius 7 cm and height 44 cm. Calculate its volume using pi = 22/7. **1**
(A) 6778 (B) 6777 (C) 6776 (D) 6775

16. A GP has first term 38 and common ratio 2. Calculate term number 4. **1**
(A) 304 (B) 303 (C) 305 (D) 306

17. Calculate the distance between A(39, 41) and B(159, 201). **1**
(A) 200 (B) 202 (C) 199 (D) 201

18. A chord subtends 114 degrees at the centre. Calculate the angle it subtends at a point on the major arc. **1**
(A) 57 (B) 58 (C) 56 (D) 59

19. In an isosceles triangle the vertex angle is 118 degrees. Calculate either equal base angle. 1
(A) 30 (B) 33 (C) 31 (D) 32

20. Factorise $x^2 + 44x + 160$. State the positive integer c such that $(x + 40)(x + c)$ is the factorisation. 1
(A) 6 (B) 5 (C) 3 (D) 4

Section B - Short responses

21. If an integer is divisible by 10, it is divisible by 5. Write its converse and use a counterexample to test it. 2

22. Calculate the mean of 41, 43, 45, 47, 49. 2

23. Determine the value of $2^{38} / 2^{35}$. 2

24. Calculate the sum of the first 45 terms of the AP beginning 39, 42, 45. 2

25. Calculate the distance between A(40, 42) and B(163, 206). 2

Section C - Short responses

26. A cylinder has radius 7 cm and height 39 cm. Calculate its volume using pi = 22/7. Calculate its curved and total surface areas as well. 3

27. In an isosceles triangle the vertex angle is 124 degrees. Calculate either equal base angle. Show the governing rule, substitution and conclusion clearly. 3

28. The diagonals of a parallelogram intersect at O. If AO = 45 cm, find the full diagonal AC. Show the governing rule, substitution and conclusion clearly. 3

29. A GP has first term 36 and common ratio 2. Calculate term number 5. Show the governing rule, substitution and conclusion clearly. 3

30. Calculate the mean of 36, 38, 40, 42, 44. State the median and range, explaining how you identify each. **3**

31. Ten students have a mean score of 17 and twenty students have a mean score of 23. 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. 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**

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

34. An isosceles triangle ABC has AB = AC and angle A = 40 degrees. Calculate angles B and C. Explain why two triangles cannot be proved congruent using equal angles alone. **5**

35. Use Euclid's division algorithm to find the greatest common divisor of 121 and 77, 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 12 seats in its first row, with 3 more in each successive row. There are 17 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 [7, 9, 11, 13, 15].

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

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

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

38. A bag holds 9 red and 10 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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