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CLASS 10 MATHEMATICS STANDARD - PRACTICE QUESTIONS

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CLASS 10

Mathematics Standard

Sample Paper 2 - 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. An AP has first term 4 and common difference 4. Calculate its 10th term. **1**
(A) 40 (B) 42 (C) 41 (D) 39

2. Calculate the distance between A(2, 4) and B(11, 16). **1**
(A) 14 (B) 16 (C) 15 (D) 17

3. Solve x + y = 9 and 2x - y = 3. State the value of x. **1**
(A) 4 (B) 6 (C) 5 (D) 3

4. Factorise x^2 + 8x + 16. State the positive integer c such that (x + 4)(x + c) is the factorisation. **1**
(A) 3 (B) 4 (C) 5 (D) 6

5. A cylinder has radius 7 cm and height 5 cm. Calculate its volume using pi = 22/7. **1**
(A) 770 (B) 769 (C) 772 (D) 771

6. Calculate the mean of 3, 5, 7, 9, 11. **1**
(A) 8 (B) 7 (C) 6 (D) 9

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

8. Calculate the HCF of 36 and 54. **1**
(A) 19 (B) 18 (C) 17 (D) 20

9. Calculate the smaller root of $x^2 - 9x + 18 = 0$. 1
(A) 3 (B) 2 (C) 4 (D) 5

10. Two similar triangles have corresponding-side ratio 2:5. If the smaller area is 20 square centimetres, find the larger area. 1
(A) 125 (B) 127 (C) 124 (D) 126

11. For an acute angle theta, tan theta = 9/12. Calculate sin theta. 1
(A) 3/5 (B) -2/5 (C) 13/5 (D) 8/5

12. Tangents PA and PB are drawn from P to a circle. PA = 13 cm. Calculate PB. 1
(A) 14 (B) 15 (C) 13 (D) 12

13. A sector has central angle 90 degrees and radius 6 cm. Calculate its area as a coefficient of pi. 1
(A) 8 (B) 10 (C) 9 (D) 11

14. Calculate the sum of the first 10 terms of the AP beginning 4, 8, 12. 1
(A) 220 (B) 219 (C) 221 (D) 222

15. Calculate the distance between A(3, 5) and B(15, 21). 1
(A) 22 (B) 19 (C) 20 (D) 21

16. Solve x + y = 11 and 2x - y = 4. State the value of x. 1
(A) 7 (B) 5 (C) 6 (D) 4

17. Factorise $x^2 + 7x + 10$. State the positive integer c such that (x + 5)(x + c) is the factorisation. 1
(A) 2 (B) 4 (C) 3 (D) 1

18. A cylinder has radius 7 cm and height 6 cm. Calculate its volume using pi = 22/7. 1
(A) 924 (B) 923 (C) 925 (D) 926

19. Calculate the mean of 4, 6, 8, 10, 12. 1
(A) 10 (B) 7 (C) 8 (D) 9

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

Section B - Short responses

21. Calculate the HCF of 48 and 72. **2**

22. Calculate the smaller root of $x^2 - 11x + 28 = 0$. **2**

23. Two similar triangles have corresponding-side ratio 2:6. If the smaller area is 20 square centimetres, find the larger area. **2**

24. For an acute angle theta, tan theta = 12/16. Calculate sin theta. **2**

25. Tangents PA and PB are drawn from P to a circle. PA = 16 cm. Calculate PB. **2**

Section C - Short responses

26. A sector has central angle 90 degrees and radius 8 cm. Calculate its area as a coefficient of pi. **3**

27. An AP has first term 5 and common difference 2. Calculate its 11th term. **3**

28. Calculate the distance between A(4, 6) and B(19, 26). **3**

29. Solve x + y = 13 and 2x - y = 5. State the value of x. **3**

30. Factorise $x^2 + 9x + 18$. State the positive integer c such that (x + 6)(x + c) is the factorisation. **3**

31. A cylinder has radius 7 cm and height 7 cm. Calculate its volume using pi = 22/7. **3**

Section D - Extended responses

32. Establish, with a proof, that sqrt(3) is irrational. State where the contradiction occurs. **5**

33. In a right triangle, prove that the perpendicular from the right-angle vertex to the hypotenuse creates two triangles similar to the original triangle. State two resulting side relations. **5**

34. Calculate the 20th term and the sum of the first 20 terms of the AP 5, 8, 11, ... **5**

35. Calculate the point dividing the segment from A(2, 3) to B(8, 11) internally in the ratio AP:PB = 1:3. Also find AB. **5**

Section E - Case and application questions

36. A small hall has 6 seats in its first row and 3 more seats in each following row. There are 11 rows.

(a) How many seats are in the second row? **1**

(b) Find the number of seats in the last row. **1**

(c) Find the hall's total seating capacity. **2**

37. A plan places A(0,0), B(6,0) and C(6,8) on a square grid, in metres.

(a) Find AB. **1**

(b) Find the midpoint of AC. **1**

(c) Verify using lengths that ABC is right-angled. **2**

38. A probability game uses a bag containing 5 red and 6 blue counters. A counter is selected uniformly.

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

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

(c) After a red counter is removed without replacement, find the probability that the next selected counter is blue. Explain the denominator. **2**

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