Sample Paper · Class 10

Questions	Marks each	Total marks	Time	Answers on
50	**2**	**100**	**1 hour**	**OMR sheet**

Instructions

1. This paper has **50 multiple-choice questions**. Each has four options, and only one is correct.
2. Each question carries **2 marks**. The paper is out of **100 marks**.
3. Time allowed: **1 hour**.
4. In the real exam, mark your answers on the **OMR sheet**. A practice OMR sheet is included before the answer key.
5. Score **70% or more** in Round 1 to qualify for Round 2 (national level).

Name _____ Class 10 Score _____ / 100

School _____

Questions

1. For $x^2 - 9x + 8 = 0$, what is the sum of the roots?

(A) −9 **(B)** 10
(C) 9 **(D)** 8

2. If $x + y = 27$ and $x - y = 7$, what is x?

(A) 20 **(B)** 10
(C) 17 **(D)** 18

3. What is the 11th term of the AP 2, 6, 10, …?

(A) 44 **(B)** 38
(C) 46 **(D)** 42

4. A point is 25 cm from the centre of a circle of radius 7 cm. What is the length of the tangent from the point?

(A) 25 cm **(B)** 18 cm
(C) 32 cm **(D)** 24 cm

5. A card is drawn from a well-shuffled deck of 52 cards. What is the probability that it is a king?

(A) 1/52 **(B)** 1/2
(C) 1/13 **(D)** 1/4

6. If a tower casts a shadow equal to its own height, the angle of elevation of the sun is:

(A) 45° **(B)** 30°
(C) 90° **(D)** 60°

7. The quadratic equation $x^2 + 4x + 4 = 0$ has:

(A) Two distinct real roots
(B) Exactly one root which is negative
(C) No real roots
(D) Two equal real roots

8. What is the area of a sector of radius 14 cm and angle 90°? (Take π = 22/7)

(A) 616 sq cm
(B) 154 sq cm
(C) 308 sq cm
(D) 176 sq cm

9. What is the volume of a cone with radius 14 cm and height 6 cm? (Take π = 22/7)

(A) 1,232 cubic cm
(B) 1,386 cubic cm
(C) 3,696 cubic cm
(D) 616 cubic cm

10. What is HCF × LCM of 15 and 25?

(A) 40
(B) 75
(C) 380
(D) 375

11. What is the sum of the first 11 terms of the AP 2, 6, 10, ...?

(A) 286
(B) 242
(C) 240
(D) 462

12. What is the distance between (0, 2) and (5, 14)?

(A) 13 units
(B) 17 units
(C) 14 units
(D) √13 units

13. What is the value of cos 0°?

(A) 1
(B) 0
(C) 1/2
(D) √3/2

14. What is the midpoint of (1, −1) and (−5, −3)?

(A) (−3, −1)
(B) (−4, −4)
(C) (−2, −2)
(D) (−1, −2)

15. What are the roots of $x^2 - 9x + 8 = 0$?

(A) 1 and 8
(B) 9 and 8
(C) 2 and 7
(D) −1 and −8

16. If x + y = 16 and x − y = 8, what is x?

(A) 12
(B) 4
(C) 13
(D) 8

17. What is the value of tan 60°?

(A) 1/√3
(B) √3/2
(C) 1
(D) √3

18. What is the distance between (−1, 3) and (7, 18)?

(A) 23 units
(B) 17 units
(C) 18 units
(D) √17 units

19. What is the sum of the first 19 terms of the AP 2, 6, 10, ...?

(A) 1,406 **(B)** 720
(C) 798 **(D)** 722

20. For $x^2 - 7x + 12 = 0$, what is the sum of the roots?

(A) -7 **(B)** 7
(C) 12 **(D)** 8

21. What is the midpoint of $(-4, -5)$ and $(2, 3)$?

(A) $(0, -1)$ **(B)** $(-2, -2)$
(C) $(-1, -1)$ **(D)** $(3, 4)$

22. A card is drawn from a well-shuffled deck of 52 cards. What is the probability that it is a red card?

(A) 1/13 **(B)** 1/2
(C) 1/4 **(D)** 1/52

23. A point is 15 cm from the centre of a circle of radius 9 cm. What is the length of the tangent from the point?

(A) 24 cm **(B)** 12 cm
(C) 6 cm **(D)** 13 cm

24. What is the area of a sector of radius 21 cm and angle 60°? (Take $\pi = 22/7$)

(A) 462 sq cm **(B)** 1386 sq cm
(C) 231 sq cm **(D)** 253 sq cm

25. What is HCF × LCM of 24 and 36?

(A) 864 **(B)** 72
(C) 60 **(D)** 876

26. The quadratic equation $x^2 + 3x + 4 = 0$ has:

(A) Two equal real roots **(B)** Exactly one root which is negative
(C) No real roots **(D)** Two distinct real roots

27. What are the roots of $x^2 - 7x + 12 = 0$?

(A) -3 and -4 **(B)** 3 and 4
(C) 4 and 5 **(D)** 7 and 12

28. What is the 19th term of the AP 2, 6, 10, ...?

(A) 70 **(B)** 76
(C) 74 **(D)** 78

29. What is HCF × LCM of 16 and 24?

(A) 48 **(B)** 384
(C) 40 **(D)** 392

30. What is the sum of the first 15 terms of the AP 7, 9, 11, ...?

(A) 315 **(B)** 525
(C) 308 **(D)** 345

31. A card is drawn from a well-shuffled deck of 52 cards. What is the probability that it is the ace of spades?

(A) 1/52 **(B)** 1/2
(C) 1/13 **(D)** 1/4

32. What is the area of a sector of radius 21 cm and angle 120°? (Take π = 22/7)

(A) 1386 sq cm **(B)** 484 sq cm
(C) 924 sq cm **(D)** 462 sq cm

33. What is the distance between (3, 3) and (11, 18)?

(A) 23 units **(B)** 17 units
(C) 18 units **(D)** √17 units

34. What is the midpoint of (−1, 3) and (3, 5)?

(A) (2, 8) **(B)** (2, 1)
(C) (1, 4) **(D)** (4, 1)

35. If $x + y = 13$ and $x - y = 3$, what is x?

(A) 5 **(B)** 8
(C) 10 **(D)** 9

36. What are the roots of $x^2 - 12x + 35 = 0$?

(A) −5 and −7 **(B)** 5 and 7
(C) 6 and 8 **(D)** 12 and 35

37. The quadratic equation $x^2 + 8x + 4 = 0$ has:

(A) Two distinct real roots **(B)** No real roots
(C) Two equal real roots **(D)** Exactly one root which is negative

38. What is the 15th term of the AP 7, 9, 11, ...?

(A) 30 **(B)** 33
(C) 35 **(D)** 37

39. For $x^2 - 12x + 35 = 0$, what is the sum of the roots?

(A) 12 **(B)** 13
(C) 35 **(D)** −12

40. What is the sum of the first 24 terms of the AP 8, 15, 22, ...?

(A) 2,124 **(B)** 2,116
(C) 4,056 **(D)** 2,292

41. What is the midpoint of (2, 6) and (4, 0)?

(A) (1, −3) **(B)** (3, 3)
(C) (6, 6) **(D)** (4, 3)

42. A point is 17 cm from the centre of a circle of radius 8 cm. What is the length of the tangent from the point?

(A) 16 cm **(B)** 9 cm
(C) 25 cm **(D)** 15 cm

43. What is the value of sin 30°?

(A) 1 **(B)** √3/2
(C) 1/2 **(D)** 1/√2

44. What is the 24th term of the AP 8, 15, 22, ...?

(A) 168 **(B)** 162
(C) 176 **(D)** 169

45. If $x + y = 19$ and $x - y = 3$, what is x?

(A) 11 **(B)** 16
(C) 8 **(D)** 12

46. What is the distance between (−1, 4) and (2, 8)?

(A) √5 units **(B)** 6 units
(C) 7 units **(D)** 5 units

47. A point is 10 cm from the centre of a circle of radius 6 cm. What is the length of the tangent from the point?

(A) 9 cm **(B)** 8 cm
(C) 16 cm **(D)** 4 cm

48. What is the volume of a cone with radius 21 cm and height 10 cm? (Take π = 22/7)

(A) 2,310 cubic cm **(B)** 4,620 cubic cm
(C) 13,860 cubic cm **(D)** 4,774 cubic cm

49. What are the roots of $x^2 - 7x + 6 = 0$?

(A) 7 and 6 **(B)** 2 and 5
(C) 1 and 6 **(D)** −1 and −6

50. What is the area of a sector of radius 14 cm and angle 45°? (Take π = 22/7)

(A) 154 sq cm **(B)** 77 sq cm
(C) 616 sq cm **(D)** 99 sq cm

Practice OMR sheet

Fill one circle for each question, using a dark pen. Practising this now saves time in the real exam.

1	○ A	○ B	○ C	○ D
2	○ A	○ B	○ C	○ D
3	○ A	○ B	○ C	○ D
4	○ A	○ B	○ C	○ D
5	○ A	○ B	○ C	○ D
6	○ A	○ B	○ C	○ D
7	○ A	○ B	○ C	○ D
8	○ A	○ B	○ C	○ D
9	○ A	○ B	○ C	○ D
10	○ A	○ B	○ C	○ D
11	○ A	○ B	○ C	○ D
12	○ A	○ B	○ C	○ D
13	○ A	○ B	○ C	○ D
14	○ A	○ B	○ C	○ D
15	○ A	○ B	○ C	○ D
16	○ A	○ B	○ C	○ D
17	○ A	○ B	○ C	○ D
18	○ A	○ B	○ C	○ D
19	○ A	○ B	○ C	○ D
20	○ A	○ B	○ C	○ D
21	○ A	○ B	○ C	○ D
22	○ A	○ B	○ C	○ D
23	○ A	○ B	○ C	○ D
24	○ A	○ B	○ C	○ D
25	○ A	○ B	○ C	○ D

26	○ A	○ B	○ C	○ D
27	○ A	○ B	○ C	○ D
28	○ A	○ B	○ C	○ D
29	○ A	○ B	○ C	○ D
30	○ A	○ B	○ C	○ D
31	○ A	○ B	○ C	○ D
32	○ A	○ B	○ C	○ D
33	○ A	○ B	○ C	○ D
34	○ A	○ B	○ C	○ D
35	○ A	○ B	○ C	○ D
36	○ A	○ B	○ C	○ D
37	○ A	○ B	○ C	○ D
38	○ A	○ B	○ C	○ D
39	○ A	○ B	○ C	○ D
40	○ A	○ B	○ C	○ D
41	○ A	○ B	○ C	○ D
42	○ A	○ B	○ C	○ D
43	○ A	○ B	○ C	○ D
44	○ A	○ B	○ C	○ D
45	○ A	○ B	○ C	○ D
46	○ A	○ B	○ C	○ D
47	○ A	○ B	○ C	○ D
48	○ A	○ B	○ C	○ D
49	○ A	○ B	○ C	○ D
50	○ A	○ B	○ C	○ D

Answer key

Check your answers. Your score = number of correct answers × 2 marks.

1	2	3	4	5	6	7	8	9	10
C	**C**	**D**	**D**	**C**	**A**	**D**	**B**	**A**	**D**
11	12	13	14	15	16	17	18	19	20
B	**A**	**A**	**C**	**A**	**A**	**D**	**B**	**D**	**B**
21	22	23	24	25	26	27	28	29	30
C	**B**	**B**	**C**	**A**	**C**	**B**	**C**	**B**	**A**
31	32	33	34	35	36	37	38	39	40
A	**D**	**B**	**C**	**B**	**B**	**A**	**C**	**A**	**A**
41	42	43	44	45	46	47	48	49	50
B	**D**	**C**	**D**	**A**	**D**	**B**	**B**	**C**	**B**

Want more practice? Registered students also get mock tests, and free weekend quizzes are open to everyone at mathsolympiad.net/wc.