First Hope

GET SOLUTIONS

Click here to visit our website

CLASS 10 MATHEMATICS STANDARD - PRACTICE QUESTIONS

For solutions, download the FirstHope app now.

Scan or click here

Click here to get solutions >

Available on Google Play

JOIN THE FIRSTHOPE COMMUNITY

Join our Telegram channel

Click here to join Telegram >

Scan or click here

@FirstHope_CBSE_Notes

Instagram

@firsthope.school

Click here to follow >

YouTube channel

@firsthope.school

Click here to watch >

FirstHope website

firsthope.co.in

Click here to visit our website >

CBSE / Class 10 / Mathematics Standard

For solutions, download the FirstHope app now.

CLASS 10

Mathematics Standard

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. Factorise $x^2 + 26x + 88$. State the positive integer c such that $(x + 22)(x + c)$ is the factorisation. **1**
(A) 6 (B) 5 (C) 3 (D) 4

2. Solve $x + y = 45$ and $2x - y = 21$. State the value of x. **1**
(A) 24 (B) 22 (C) 23 (D) 21

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

4. Calculate the distance between A(20, 22) and B(83, 106). **1**
(A) 105 (B) 106 (C) 104 (D) 107

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

6. Calculate the smaller root of $x^2 - 55x + 754 = 0$. **1**
(A) 26 (B) 27 (C) 25 (D) 28

7. A sector has central angle 90 degrees and radius 42 cm. Calculate its area as a coefficient of pi. **1**
(A) 441 (B) 440 (C) 442 (D) 443

8. Tangents PA and PB are drawn from P to a circle. PA = 73 cm. Calculate PB. **1**
(A) 74 (B) 75 (C) 73 (D) 72

9. For an acute angle theta, tan theta = 78/104. Calculate sin theta. **1**
(A) 13/5 (B) 8/5 (C) -2/5 (D) 3/5

10. A cylinder has radius 7 cm and height 23 cm. Calculate its volume using pi = 22/7. **1**
(A) 3544 (B) 3543 (C) 3541 (D) 3542

11. Two similar triangles have corresponding-side ratio 2:23. If the smaller area is 20 square centimetres, find the larger area. **1**
(A) 2644 (B) 2645 (C) 2647 (D) 2646

12. Calculate the HCF of 240 and 360. **1**
(A) 122 (B) 120 (C) 119 (D) 121

13. Calculate the mean of 25, 27, 29, 31, 33. **1**
(A) 31 (B) 29 (C) 28 (D) 30

14. Calculate the sum of the first 33 terms of the AP beginning 27, 30, 33. **1**
(A) 2477 (B) 2476 (C) 2475 (D) 2474

15. Factorise $x^2 + 22x + 40$. State the positive integer c such that $(x + 20)(x + c)$ is the factorisation. **1**
(A) 1 (B) 3 (C) 2 (D) 4

16. A cylinder has radius 7 cm and height 22 cm. Calculate its volume using pi = 22/7. **1**
(A) 3390 (B) 3388 (C) 3387 (D) 3389

17. Two similar triangles have corresponding-side ratio 2:24. If the smaller area is 20 square centimetres, find the larger area. **1**
(A) 2882 (B) 2879 (C) 2881 (D) 2880

18. A sector has central angle 90 degrees and radius 46 cm. Calculate its area as a coefficient of pi. **1**
(A) 530 (B) 531 (C) 528 (D) 529

19. Solve x + y = 51 and 2x - y = 24. State the value of x. **1**
(A) 26 (B) 27 (C) 24 (D) 25

20. Tangents PA and PB are drawn from P to a circle. PA = 67 cm. Calculate PB. (A) 66 (B) 68 (C) 67 (D) 69 — 1

Section B - Short responses

21. For an acute angle theta, tan theta = 60/80. Calculate sin theta. — 2

22. Calculate the smaller root of $x^2 - 45x + 504 = 0$. — 2

23. Calculate the distance between A(19, 21) and B(79, 101). — 2

24. Calculate the HCF of 288 and 432. — 2

25. Calculate the mean of 23, 25, 27, 29, 31. — 2

Section C - Short responses

26. A fair die is rolled. Calculate the probability that its result is at most 3. Show the governing rule, substitution and conclusion clearly. — 3

27. An AP has first term 21 and common difference 3. Calculate its 27th term. Show the governing rule, substitution and conclusion clearly. — 3

28. A cylinder has radius 7 cm and height 25 cm. Calculate its volume using pi = 22/7. Calculate its curved and total surface areas as well. — 3

29. Factorise $x^2 + 25x + 46$. State the positive integer c such that $(x + 23)(x + c)$ is the factorisation. Show the governing rule, substitution and conclusion clearly. — 3

30. Two similar triangles have corresponding-side ratio 2:27. If the smaller area is 20 square centimetres, find the larger area. Show the governing rule, substitution and conclusion clearly. — 3

31. Solve x + y = 43 and 2x - y = 20. Calculate both x and y and check your answer in each equation. — 3

Section D - Extended responses

32. 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**

33. Tangents PA and PB touch a circle at A and B. Prove PA = PB using the centre O. **5**

34. From a point 20 m from the base of a vertical tower on level ground, its top has angle of elevation 60 degrees. Calculate the tower's height. Then find the angle from a point 20sqrt(3) m from its base. **5**

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

Section E - Case and application questions

36. A rectangular garden has width x m, length (x+3) m and area 54 m^2.

(a) Form its quadratic equation. **1**

(b) Find the positive root. **1**

(c) State the dimensions and perimeter. **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**

First Hope

First Hope

GET SOLUTIONS

Click here to visit our website

CLASS 10 MATHEMATICS STANDARD - PRACTICE QUESTIONS

For solutions, download the FirstHope app now.

Scan or click here

Click here to get solutions >

Available on Google Play

JOIN THE FIRSTHOPE COMMUNITY

Join our Telegram channel

Click here to join Telegram >

Scan or click here

@FirstHope_CBSE_Notes

Instagram

@firsthope.school

Click here to follow >

YouTube channel

@firsthope.school

Click here to watch >

FirstHope website

firsthope.co.in

Click here to visit our website >

CBSE / Class 10 / Mathematics Standard

For solutions, download the FirstHope app now.