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 4 - 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 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

2. Factorise $x^2 + 33x + 90$. State the positive integer c such that $(x + 30)(x + c)$ is the factorisation. **1**
(A) 4 (B) 3 (C) 2 (D) 5

3. For an acute angle theta, tan theta = 81/108. Calculate sin theta. **1**
(A) 8/5 (B) 3/5 (C) 13/5 (D) -2/5

4. Calculate the smaller root of $x^2 - 67x + 1120 = 0$. **1**
(A) 33 (B) 32 (C) 31 (D) 34

5. Calculate the HCF of 408 and 612. **1**
(A) 204 (B) 206 (C) 203 (D) 205

6. Tangents PA and PB are drawn from P to a circle. PA = 106 cm. Calculate PB. **1**
(A) 105 (B) 108 (C) 106 (D) 107

7. Calculate the sum of the first 37 terms of the AP beginning 31, 35, 39. **1**
(A) 3811 (B) 3813 (C) 3812 (D) 3810

8. Two similar triangles have corresponding-side ratio 2:32. If the smaller area is 20 square centimetres, find the larger area. **1**
(A) 5122 (B) 5120 (C) 5119 (D) 5121

9. Calculate the distance between A(30, 32) and B(123, 156). **1**
(A) 156 (B) 154 (C) 155 (D) 157

10. Solve x + y = 57 and 2x - y = 27. State the value of x. **1**
(A) 28 (B) 30 (C) 27 (D) 29

11. A sector has central angle 90 degrees and radius 66 cm. Calculate its area as a coefficient of pi. **1**
(A) 1088 (B) 1089 (C) 1091 (D) 1090

12. Calculate the mean of 27, 29, 31, 33, 35. **1**
(A) 32 (B) 30 (C) 31 (D) 33

13. A cylinder has radius 7 cm and height 34 cm. Calculate its volume using pi = 22/7. **1**
(A) 5237 (B) 5235 (C) 5236 (D) 5238

14. Factorise x^2 + 35x + 124. State the positive integer c such that (x + 31)(x + c) is the factorisation. **1**
(A) 3 (B) 4 (C) 6 (D) 5

15. A fair die is rolled. Calculate the probability that its result is at most 5. **1**
(A) -1/6 (B) 5/6 (C) 11/6 (D) 17/6

16. For an acute angle theta, tan theta = 87/116. Calculate sin theta. **1**
(A) 13/5 (B) 3/5 (C) 8/5 (D) -2/5

17. An AP has first term 33 and common difference 3. Calculate its 39th term. **1**
(A) 149 (B) 148 (C) 147 (D) 146

18. Calculate the smaller root of x^2 - 63x + 990 = 0. **1**
(A) 32 (B) 31 (C) 30 (D) 29

19. A sector has central angle 90 degrees and radius 64 cm. Calculate its area as a coefficient of pi. 1
(A) 1024 (B) 1023 (C) 1026 (D) 1025

20. Solve x + y = 71 and 2x - y = 34. State the value of x. 1
(A) 34 (B) 35 (C) 37 (D) 36

Section B - Short responses

21. Two similar triangles have corresponding-side ratio 2:36. If the smaller area is 20 square centimetres, find the larger area. 2

22. Calculate the HCF of 384 and 576. 2

23. Calculate the distance between A(26, 28) and B(107, 136). 2

24. Tangents PA and PB are drawn from P to a circle. PA = 103 cm. Calculate PB. 2

25. Calculate the mean of 31, 33, 35, 37, 39. 2

Section C - Short responses

26. A cylinder has radius 7 cm and height 36 cm. Calculate its volume using pi = 22/7. Calculate its curved and total surface areas as well. 3

27. Factorise x^2 + 34x + 64. State the positive integer c such that (x + 32)(x + c) is the factorisation. Show the governing rule, substitution and conclusion clearly. 3

28. A fair die is rolled. Calculate the probability that its result is at most 4. Show the governing rule, substitution and conclusion clearly. 3

29. For an acute angle theta, tan theta = 84/112. Calculate sin theta. Also find cos(theta) and cosec(theta), showing the right-triangle relation used. 3

30. An AP has first term 35 and common difference 2. Calculate its 41th term. Show the governing rule, substitution and conclusion clearly. 3

31. Solve $x^2-69x+1188=0$ by factorisation. Verify the sum and product of your roots. 3

Section D - Extended responses

32. 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

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 point dividing the segment from A(2, 3) to B(8, 11) internally in the ratio AP:PB = 1:3. Also find AB. 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 70 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 [6, 8, 10, 12, 14].

(a) Find their sum. 1

(b) Find their mean. 1

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

38. A bag holds 8 red and 9 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.