CBSE CLASS X

Mathematics Standard (041)

QUESTION PAPER

From previous CBSE Board Exam questions

Code: OMGPF0 **Questions: 65** **Maximum Marks: 164** **Generated: 2026-06-15 13:05**

SELECTIONS USED

Source	Previous-year board
Subject	Mathematics
Lessons	Arithmetic Progressions
Year	2022-2026
Questions selected	65

Composition — Types: 20 MCQ · 17 Short · 9 Case-based · 9 Long · 6 Very short · 4 Assertion–reason

Q1. § 5.3 nth Term of an AP § 5.4 Sum of First n Terms of an AP **[4]**

> Your elder brother wants to buy a car and plans to take a loan from a bank for his car. He repays his total loan of ₹ 1,18,000 by paying every month, starting with the first instalment of ₹ 1,000 and he increases the instalment by ₹ 100 every month.

Based on the information given above, answer the following questions :

(i) Find the amount paid by him in the 30^{th} instalment. [1]

(ii) If the total number of instalments is 40, what is the amount paid in the last instalment ? [1]

(iii) What amount does he still have to pay after the 30^{th} instalment ? [2]

Previously asked in: 2026 30/2/1 Q36

◆ **Arithmetic Progressions** Sum of n terms of an AP (remaining loan after 30th instalment) nth term of an AP (finding the 30th and 40th instalment)

Q2. § 5.5 Summary **[5]**

In an A.P. of 40 terms, the sum of first 9 terms is 153 and the sum of last 6 terms is 687. Determine the first term and common difference of A.P. Also, find the sum of all the terms of the A.P.

Previously asked in: 2024 30/1/1 Q33(B)

◆ **Arithmetic Progressions** 5.3 nth Term of an AP 5.4 Sum of First n Terms of an AP

Q3. § 5.5 Summary **[5]**

The sum of first and eighth terms of an A.P. is 32 and their product is 60. Find the first term and common difference of the A.P. Hence, also find the sum of its first 20 terms.

Previously asked in: 2024 30/1/1 Q33(A)

◆ **Arithmetic Progressions** 5.3 nth Term of an AP 5.4 Sum of First n Terms of an AP

Q4. § 5.5 Summary **[1]**

In an A.P., if the first term $a = 7$, nth term $a_n = 84$ and the sum of first n terms $s_n = \frac{2093}{2}$, then n is equal to :

(a) 22
(b) 24
(c) 23
(d) 26

Previously asked in: 2024 30/1/1 Q4

◆ **Arithmetic Progressions** 5.3 nth Term of an AP 5.4 Sum of First n Terms of an AP

Q5. § 5.5 Summary **[3]**

The sum of first n terms of an A.P. is $2n^2 + 13n$. Find its nth term and hence 10th term.

Previously asked in: 2026 30/5/1 Q27(b) (OR-2)

◆ **Arithmetic Progressions** 5.3 nth Term of an AP 5.4 Sum of First n Terms of an AP

Q6. § 5.2 Arithmetic Progressions § 5.5 Summary **[3]**

In an A.P., 15th term exceeds the 8th term by 21. If sum of first 10 terms is 55, then form the A.P.

Previously asked in: 2026 30/5/1 Q27(a) (OR-1)

◆ **Arithmetic Progressions** 5.3 nth Term of an AP 5.4 Sum of First n Terms of an AP

Q7. § 5.5 Summary **[1]**

If a_n represents nth term of the A.P. $-\frac{15}{4}, -\frac{10}{4}, -\frac{5}{4}, \ldots$ then value of $a_{16} - a_{12}$ is

(A) 4
(B) $\frac{5}{4}$
(C) 5
(D) $\frac{25}{4}$

Previously asked in: 2026 30/5/1 Q8

◆ **Arithmetic Progressions** 5.3 nth Term of an AP

Q8. § 5.5 Summary **[3]**

If the last term of an A.P. of 30 terms is 119 and the 8th term from the end (towards the first term) is 91, then find the common difference of the A.P. Hence, find the sum of all the terms of the A.P.

Previously asked in: 2022 30/4/1 Q10

◆ **Arithmetic Progressions** 5.3 nth Term of an AP 5.4 Sum of First n Terms of an AP

Q9. **[2]**

How many natural numbers are there between 1 and 1000 which are divisible by 5 but not by 2 ?

Previously asked in: 2022 30/4/1 Q2

◆ **Arithmetic Progressions** Counting terms in an Arithmetic Progression

Q10. § 5.5 Summary **[2]**

Find the sum of first 20 terms of an A.P. whose n^{th} term is given as $a_n = 5 - 2n$.

Previously asked in: 2022 30/2/1 Q6

◆ **Arithmetic Progressions** 5.3 nth Term of an AP 5.4 Sum of First n Terms of an AP

Q11. **[2]**

Find a and b so that the numbers $a, 7, b, 23$ are in A.P.

Previously asked in: 2022 30/2/1 Q2(b)

◆ **Arithmetic Progressions** 5.2 Arithmetic Progressions

Q12. § 5.5 Summary **[2]**

Which term of the A.P. $-\frac{11}{2}, -3, -\frac{1}{2}, \ldots$ is $\frac{49}{2}$?

Previously asked in: 2022 30/2/1 Q2(a)

◆ **Arithmetic Progressions** 5.3 nth Term of an AP

Q13. § 5.2 Arithmetic Progressions § 5.5 Summary **[5]**

If the sum of first 6 terms of an A.P. is 36 and that of the first 16 terms is 256, find the sum of first 10 terms.

Previously asked in: 2023 30/6/1 Q34(B)

◆ **Arithmetic Progressions** 5.4 Sum of First n Terms of an AP

Q14. § 5.2 Arithmetic Progressions § 5.5 Summary **[5]**

The ratio of the 11th term to the 18th term of an A.P. is 2 : 3. Find the ratio of the 5th term to the 21st term. Also, find the ratio of the sum of first 5 terms to the sum of first 21 terms.

Previously asked in: 2023 30/6/1 Q34(A)

◆ **Arithmetic Progressions** 5.3 nth Term of an AP 5.4 Sum of First n Terms of an AP

Q15. § 5.5 Summary **[1]**

If the sum of the first n terms of an A.P be $3n^2 + n$ and its common difference is 6, then its first term is

A 2
B 3
C 1
D 4

Previously asked in: 2023 30/6/1 Q18

◆ **Arithmetic Progressions** 5.4 Sum of First n Terms of an AP

Q16. **[5]**

250 logs are stacked in the following manner : 22 logs in the bottom row, 21 in the next row, 20 in the row next to it and so on (as shown by an example). In how many rows, are the 250 logs placed and how many logs are there in the top row ?

Previously asked in: 2023 30/1/1 Q35(b) (OR-2)

◆ **Arithmetic Progressions** Sum of n terms of an AP and finding number of terms

Q17. § 5.5 Summary **[5]**

The ratio of the 11th term to 17th term of an A.P. is 3 : 4. Find the ratio of 5th term to 21st term of the same A.P. Also, find the ratio of the sum of first 5 terms to that of first 21 terms.

Previously asked in: 2023 30/1/1 Q35(a) (OR-1)

◆ **Arithmetic Progressions** 5.3 nth Term of an AP 5.4 Sum of First n Terms of an AP

Q18. § 5.5 Summary **[1]**

If $p-1, p+1$ and $2p+3$ are in A.P., then the value of p is

A -2
B 4
C 0
D 2

Previously asked in: 2023 30/1/1 Q3

◆ **Arithmetic Progressions** 5.2 Arithmetic Progressions

Q19. § 5.5 Summary **[4]**

> In order to organise, Annual Sports Day, a school prepared an eight lane running track with an integrated football field inside the track area as shown below. The length of innermost lane of the track is 400 m and each subsequent lane is 7.6 m longer than the preceding lane.

Based on given information, answer the following questions, using concept of Arithmetic Progression.

(i) What is the length of the 6th lane ? [1]

(ii) How long is the 8th lane than that of 4th lane ? [1]

(iii) While practicing for a race, a student took one round each in first six lanes. Find the total distance covered by the student. [2]

Previously asked in: 2025 30/6/1 Q37

◆ **Arithmetic Progressions** 5.2 Arithmetic Progressions

Q20. § 5.5 Summary **[4]**

> In an equilateral triangle of side 10 cm, equilateral triangles of side 1 cm are formed as shown in the figure below, such that there is one triangle in the first row, three triangles in the second row, five triangles in the third row and so on.

Based on given information, answer the following questions using Arithmetic Progression.

(i) How many triangles will be there in bottom most row ? [1]

(ii) How many triangles will be there in fourth row from the bottom ? [1]

(iii) Find the total number of triangles of side 1 cm each till 8th row. [2]

Previously asked in: 2025 30/5/1 Q37

◆ **Arithmetic Progressions** 5.2 Arithmetic Progressions 5.4 Sum of First n Terms of an AP

Q21. § 5.2 Arithmetic Progressions § 5.5 Summary **[1]**

Directions: A statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option. Assertion (A): For an A.P., 3,6,9, ..., 198, 10th term from the end is 168. Reason (R): If 'a' and 'l' are the first term and last term of an A.P. with common difference 'd', then nth term from the end of the given A.P. is $l-(n-1)d$.

A Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
B Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of (A).
C Assertion (A) is true, but Reason (R) is false.
D Assertion (A) is false, but Reason (R) is true.

Previously asked in: 2025 30/5/1 Q20

◆ **Arithmetic Progressions** 5.2 Arithmetic Progressions 5.3 nth Term of an AP

Q22. § 5.1 Introduction § 5.4 Sum of First n Terms of an AP § 5.5 Summary **[4]**

> Cable cars at hill stations are one of the major tourist attractions. On a hill station, the length of cable car ride from base point to top most point on the hill is 5000 m. Poles are installed at equal intervals on the way to provide support to the cables on which car moves. The distance of first pole from base point is 200 m and subsequent poles are installed at equal interval of 150 m. Further, the distance of last pole from the top is 300 m.

Based on above information, answer the following questions using Arithmetic Progression :

(i) Find the distance of 10^{th} pole from the base. [1]

(ii) Find the distance between 15^{th} pole and 25^{th} pole. [1]

(iii) Find the time taken by cable car to reach 15^{th} pole from the top if it is moving at the speed of 5 m/sec and coming from top. [2]

Previously asked in: 2025 30/4/1 Q37

◆ **Arithmetic Progressions** 5.2 Arithmetic Progressions

Q23. § 5.5 Summary **[2]**

Find the sum of the first 28 terms of an A.P. whose n^{th} term is given by $a_n = 3n - 2$.

Previously asked in: 2026 30/3/1 Q22(b)

◆ **Arithmetic Progressions** 5.3 nth Term of an AP 5.4 Sum of First n Terms of an AP

Q24. § 5.5 Summary **[2]**

In an A.P., the first term is 32 and the last term is -10. If the common difference is -2, then find the number of terms and their sum.

Previously asked in: 2026 30/3/1 Q22(a)

◆ **Arithmetic Progressions** 5.3 nth Term of an AP 5.4 Sum of First n Terms of an AP

Q25. § 5.5 Summary **[1]**

The n^{th} term of the A.P. $\frac{-1}{3}, \frac{2}{3}, \frac{5}{3}, \frac{8}{3}, \ldots$ is :

A $3n - 4$
B $n - \frac{4}{3}$
C $\frac{n-2}{3}$
D $\frac{n-4}{3}$

Previously asked in: 2026 30/3/1 Q11

◆ **Arithmetic Progressions** 5.3 nth Term of an AP

Q26. § 5.2 Arithmetic Progressions § 5.5 Summary **[1]**

The number of multiples of 4 lying between 12 and 250 is :

A 59
B 59·5
C 60
D 61

Previously asked in: 2026 30/3/1 Q6

◆ **Arithmetic Progressions** 5.2 Arithmetic Progressions

Q27. § 5.5 Summary **[1]**

Which of the following sequence is *not* an A.P. ?

A $2, \frac{5}{2}, 3, \frac{7}{2}, \ldots$
B $-1 \cdot 2, -3 \cdot 2, -5 \cdot 2, -7 \cdot 2, \ldots$
C $\sqrt{2}, \sqrt{8}, \sqrt{18}, \ldots$
D $1^2, 3^2, 5^2, 7^2, \ldots$

Previously asked in: 2026 30/2/1 Q7

◆ **Arithmetic Progressions** 5.2 Arithmetic Progressions

Q28. § 5.1 Introduction **[4]**

> In a potato race, a bucket is placed at the starting point, which is 5 m from the first potato. The other potatoes are arranged 3 m apart in a straight line, with a total of 10 potatoes, as shown in the figure :
>
> A competitor starts from the bucket, picks up the nearest potato, runs back to the bucket to drop it in, then returns to pick up the next potato. This process continues until all the potatoes are in the bucket.

Based on the above information, answer the following questions :

(i) What is the distance covered to pick up the first potato and drop it in bucket ? [1]

(ii) What is the distance covered to pick up the second potato and drop it in bucket ? [1]

(iii) What is the total distance the competitor has to run ? [2]

Previously asked in: 2026 30/1/1 Q36

◆ **Arithmetic Progressions** Sum of n terms of an AP (word problem: potato race) nth term of an AP

Q29. § 5.5 Summary **[1]**

The common difference of the AP : $\sqrt{2}, 2\sqrt{2}, 3\sqrt{2}, 4\sqrt{2}, \ldots\ldots$ is :

(a) $\sqrt{2}$
(b) 1
(c) $2\sqrt{2}$
(d) $-\sqrt{2}$

Previously asked in: 2026 30/1/1 Q6

◆ **Arithmetic Progressions** 5.2 Arithmetic Progressions

Q30. § 5.5 Summary **[2]**

For what value of n, are the nth terms of the APs: $9, 7, 5, \ldots$ and $15, 12, 9, \ldots$ the same?

Previously asked in: 2022 30/3/1 Q5

◆ **Arithmetic Progressions** 5.3 nth Term of an AP

Q31. § 5.5 Summary **[2]**

Find the sum of first 20 terms of an AP in which $d = 5$ and $a_{20} = 135$.

Previously asked in: 2022 30/3/1 Q2

◆ **Arithmetic Progressions** 5.3 nth Term of an AP 5.4 Sum of First n Terms of an AP

Q32. § 5.5 Summary **[4]**

> In Mathematics, relations can be expressed in various ways. The matchstick patterns are based on linear relations. Different strategies can be used to calculate the number of matchsticks used in different figures. One such pattern is shown below. The figures show triangles made of matchsticks: Figure 1 (1 triangle), Figure 2 (2 triangles), Figure 3 (3 triangles), and so on.

Observe the pattern and answer the following questions using Arithmetic Progression:

(a) Write the AP for the number of triangles used in the figures. Also, write the nth term of this AP. [2]

(b) Which figure has 61 matchsticks? [2]

Previously asked in: 2022 30/1/1 Q13

◆ **Arithmetic Progressions** 5.2 Arithmetic Progressions Finding the figure number for a given value using nth term of AP

Q33. § 5.5 Summary **[2]**

In an AP if $S_n = n(4n + 1)$, then find the AP.

Previously asked in: 2022 30/1/1 Q1(b) (OR-2)

◆ **Arithmetic Progressions** 5.3 nth Term of an AP 5.4 Sum of First n Terms of an AP

Q34. § 5.5 Summary **[2]**

Find the sum of first 30 terms of AP : $30, 24, 18, \ldots$

Previously asked in: 2022 30/1/1 Q1(a) (OR-1)

◆ **Arithmetic Progressions** 5.4 Sum of First n Terms of an AP

Q35. § 5.5 Summary **[3]**

If pth term of an A.P. is q and qth term is p, then prove that its nth term is $(p + q - n)$.

Previously asked in: 2023 30/5/1 Q27

◆ **Arithmetic Progressions** 5.3 nth Term of an AP

Q36. § 5.2 Arithmetic Progressions § 5.5 Summary **[1]**

The 11th term from the end of the A.P. : $10, 7, 4, \ldots, -62$ is :

(a) -25
(b) -16
(c) -32
(d) 0

Previously asked in: 2023 30/5/1 Q14

◆ **Arithmetic Progressions** 5.3 nth Term of an AP

Q37. § 5.5 Summary **[1]**

The common difference of the A.P. whose nth term is given by $a_n = 3n + 7$, is :

(a) 7
(b) 3
(c) $3n$
(d) 1

Previously asked in: 2023 30/5/1 Q3

◆ **Arithmetic Progressions** 5.3 nth Term of an AP

Q38. § 5.2 Arithmetic Progressions § 5.5 Summary **[3]**

Which term of the A.P. : $65, 61, 57, 53, \ldots$ is the first negative term ?

Previously asked in: 2023 30/4/1 Q26(B) (OR-2)

◆ **Arithmetic Progressions** 5.3 nth Term of an AP

Q39. § 5.2 Arithmetic Progressions § 5.5 Summary **[3]**

How many terms are there in an A.P. whose first and fifth terms are -14 and 2, respectively and the last term is 62 ?

Previously asked in: 2023 30/4/1 Q26(A) (OR-1)

◆ **Arithmetic Progressions** 5.3 nth Term of an AP

Q40. **[1]**

Assertion (A) : a, b, c are in A.P. if and only if $2b = a + c$.

Reason (R) : The sum of first n odd natural numbers is n^2.

Choose the correct option :

(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are true and Reason (R) is not the correct explanation of Assertion (A).
(c) Assertion (A) is true but Reason (R) is false.
(d) Assertion (A) is false but Reason (R) is true.

Previously asked in: 2023 30/4/1 Q20

◆ **Arithmetic Progressions** 5.2 Arithmetic Progressions Sum of first n odd natural numbers

Q41. § 5.1 Introduction § 5.2 Arithmetic Progressions § 5.5 Summary **[1]**

The next term of the A.P. : 6, $\sqrt{24}$, $\sqrt{54}$ is :

(a) $\sqrt{60}$
(b) $\sqrt{96}$
(c) $\sqrt{72}$
(d) $\sqrt{216}$

Previously asked in: 2023 30/4/1 Q3

◆ **Arithmetic Progressions** 5.3 nth Term of an AP

Q42. § 5.5 Summary **[5]**

How many terms of the arithmetic progression 45, 39, 33, ... must be taken so that their sum is 180? Explain the double answer.

Previously asked in: 2023 30/2/1 Q32

◆ **Arithmetic Progressions** 5.4 Sum of First n Terms of an AP

Q43. § 5.5 Summary **[3]**

The first term of an A.P. is 5, the last term is 45 and the sum of all the terms is 400. Find the number of terms and the common difference of the A.P.

Previously asked in: 2024 30/5/1 Q27(b) (OR-2)

◆ **Arithmetic Progressions** 5.3 nth Term of an AP 5.4 Sum of First n Terms of an AP

Q44. § 5.2 Arithmetic Progressions § 5.5 Summary **[3]**

If the sum of the first 14 terms of an A.P. is 1050 and the first term is 10, then find the 20th term and the nth term.

Previously asked in: 2024 30/5/1 Q27(a) (OR-1)

◆ **Arithmetic Progressions** 5.3 nth Term of an AP 5.4 Sum of First n Terms of an AP

Q45. § 5.2 Arithmetic Progressions § 5.5 Summary **[1]**

The number of terms in the A.P. 3, 6, 9, 12, ..., 111 is :

A 36
B 40
C 37
D 30

Previously asked in: 2024 30/5/1 Q11

◆ **Arithmetic Progressions** 5.3 nth Term of an AP

Q46. § 5.1 Introduction § 5.2 Arithmetic Progressions § 5.5 Summary **[1]**

The next (4th) term of the A.P. $\sqrt{18}$, $\sqrt{50}$, $\sqrt{98}$, ... is :

A 128
B 140
C 162
D 200

Previously asked in: 2024 30/5/1 Q1

◆ **Arithmetic Progressions** 5.3 nth Term of an AP

Q47. § 5.4 Sum of First n Terms of an AP **[4]**

> Treasure Hunt is an exciting and adventurous game where participants follow a series of clues/numbers/maps to discover hidden treasures. Players engage in a thrilling quest, solving puzzles and riddles to unveil the location of the coveted prize.
>
> While playing a treasure hunt game, some clues (numbers) are hidden in various spots collectively forming an A.P. If the number on the nth spot is $20 + 4n$, then answer the following questions to help the players in spotting the clues :

Based on the above, answer the following questions to help the players in spotting the clues :

(i) Which number is on first spot ? [1]

(ii) Which spot is numbered as 112 ? OR What is the sum of all the numbers on the first 10 spots ? [2]

(iii) Which number is on the $(n - 2)$th spot ? [1]

Previously asked in: 2024 30/4/1 Q37

◆ **Arithmetic Progressions** 5.2 Arithmetic Progressions

Q48. § 5.5 Summary **[1]**

Three numbers in A.P. have the sum 30. What is its middle term ?

A 4
B 10
C 16
D 8

Previously asked in: 2024 30/4/1 Q12

◆ **Arithmetic Progressions** 5.2 Arithmetic Progressions

Q49. § 5.5 Summary **[3]**

The ratio of the 10th term to its 30th term of an A.P. is 1 : 3 and the sum of its first six terms is 42. Find the first term and the common difference of A.P.

Previously asked in: 2024 30/3/1 Q26(b) (OR-2)

◆ **Arithmetic Progressions** 5.3 nth Term of an AP 5.4 Sum of First n Terms of an AP

Q50. § 5.4 Sum of First n Terms of an AP § 5.5 Summary **[3]**

If the sum of first 7 terms of an A.P. is 49 and that of first 17 terms is 289, find the sum of its first 20 terms.

Previously asked in: 2024 30/3/1 Q26(a) (OR-1)

◆ **Arithmetic Progressions** 5.4 Sum of First n Terms of an AP

Q51. § 5.5 Summary **[1]**

The common difference of the A.P. $\frac{1}{2x}, \frac{1-4x}{2x}, \frac{1-8x}{2x}, \ldots$ is :

A $-2x$
B -2
C 2
D $2x$

Previously asked in: 2024 30/3/1 Q2

◆ **Arithmetic Progressions** 5.2 Arithmetic Progressions

Q52. § 5.5 Summary **[3]**

In an A.P., the sum of three consecutive terms is 24 and the sum of their squares is 194. Find the numbers.

Previously asked in: 2024 30/2/1 Q26(b) (OR-2)

◆ **Arithmetic Progressions** 4.3 Solution of a Quadratic Equation by Factorisation 5.2 Arithmetic Progressions

Q53. § 5.5 Summary **[3]**

If the sum of first m terms of an A.P. is same as sum of its first n terms ($m \neq n$), then show that the sum of its first $(m+n)$ terms is zero.

Previously asked in: 2024 30/2/1 Q26(a) (OR-1)

◆ **Arithmetic Progressions** 5.4 Sum of First n Terms of an AP

Q54. § 5.5 Summary **[1]**

Which term of the A.P. $-29, -26, -23, \ldots, 61$ is 16?

(A) 11^{th}
(B) 16^{th}
(C) 10^{th}
(D) 31^{st}

Previously asked in: 2024 30/2/1 Q16

◆ **Arithmetic Progressions** 5.3 nth Term of an AP

Q55. § 5.5 Summary **[1]**

The common difference of an A.P. in which $a_{15} - a_{11} = 48$, is

(A) 12
(B) 16
(C) -12
(D) -16

Previously asked in: 2024 30/2/1 Q3

◆ **Arithmetic Progressions** 5.3 nth Term of an AP

Q56. § 5.4 Sum of First n Terms of an AP **[5]**

The minimum age of children eligible to participate in a painting competition is 8 years. It is observed that the age of the youngest boy was 8 years and the ages of the participants, when seated in order of age, have a common difference of 4 months. If the sum of the ages of all the participants is 168 years, find the age of the eldest participant in the painting competition.

Previously asked in: 2025 30/3/1 Q33 (OR-2)

◆ **Arithmetic Progressions** 5.2 Arithmetic Progressions

Q57. § 5.5 Summary **[5]**

The sum of the third term and the seventh term of an AP is 6 and their product is 8. Find the sum of the first sixteen terms of the AP.

Previously asked in: 2025 30/3/1 Q33 (OR-1)

◆ **Arithmetic Progressions** 5.3 nth Term of an AP 5.4 Sum of First n Terms of an AP

Q58. § 5.3 nth Term of an AP § 5.4 Sum of First n Terms of an AP **[3]**

A sum of $\rupee 2{,}000$ is invested at 7% per annum simple interest. Calculate the interests at the end of 1st, 2nd and 3rd year. Do these interests form an AP? If so, find the interest at the end of the 27th year.

Previously asked in: 2025 30/2/1 Q31

◆ **Arithmetic Progressions** 5.2 Arithmetic Progressions 5.3 nth Term of an AP

Q59. § 5.5 Summary **[1]**

Assertion (A) : Common difference of the AP : $5, 1, -3, \ldots$ is 4.

Reason (R) : Common difference of the AP : $a_1, a_2, a_3, \ldots$ is obtained by $d = a_n - a_{n-1}$.

Select the correct answer from the codes (A), (B), (C) and (D) given below.

A Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A).
B Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A).
C Assertion (A) is true, but Reason (R) is false.
D Assertion (A) is false, but Reason (R) is true.

Previously asked in: 2025 30/2/1 Q19

◆ **Arithmetic Progressions** 5.2 Arithmetic Progressions

Q60. § 5.5 Summary **[1]**

The 10th term of the AP $-5, \frac{-5}{2}, 0, \frac{5}{2}, \ldots$ is :

A $\frac{35}{2}$
B $\frac{-35}{2}$
C $\frac{-45}{2}$
D $\frac{45}{2}$

Previously asked in: 2025 30/2/1 Q15

◆ **Arithmetic Progressions** 5.3 nth Term of an AP

Q61. § 5.1 Introduction § 5.2 Arithmetic Progressions § 5.5 Summary **[4]**

> A school is organizing a charity run to raise funds for a local hospital. The run is planned as a series of rounds around a track, with each round being 300 metres. To make the event more challenging and engaging, the organizers decide to increase the distance of each subsequent round by 50 metres. For example, the second round will be 350 metres, the third round will be 400 metres and so on. The total number of rounds planned is 10.

Based on the information given above, answer the following questions:

(i) Write the fourth, fifth and sixth term of the Arithmetic Progression so formed. [1]

(ii) Determine the distance of the 8th round. [1]

(iii) Find the total distance run after completing all 10 rounds. [2]

Previously asked in: 2025 30/1/1 Q36

◆ **Arithmetic Progressions** 5.2 Arithmetic Progressions 5.3 nth Term of an AP 5.4 Sum of First n Terms of an AP

Q62. § 5.5 Summary **[1]**

If the sum of first m terms of an AP is $2m^2 + 3m$, then its second term is:

A 10
B 9
C 12
D 4

Previously asked in: 2025 30/1/1 Q11

◆ **Arithmetic Progressions** 5.3 nth Term of an AP 5.4 Sum of First n Terms of an AP

Q63. § 5.1 Introduction § 5.5 Summary **[4]**

> 'Kolam' is a decorative art which is made with rice flour in South Indian States. It is drawn on grid pattern of dots. One such art work is shown below.
>
> Observe the given figure carefully. There are 4 dots in first square, 8 dots in second square, 12 dots in third square and so on.

Based on the above, answer the following questions:

(i) Show that number of dots given above form an A.P. Write the first term and common difference. [1]

(ii) Write nth term of the A.P. formed. [1]

(iii) The pattern is expanded on a large ground. If total 220 dots are used, then find the number of squares formed. [2]

Previously asked in: 2026 30/4/1 Q37

◆ **Arithmetic Progressions** 5.2 Arithmetic Progressions 5.3 nth Term of an AP 5.4 Sum of First n Terms of an AP

Q64. § 5.5 Summary **[1]**

The nth term of an A.P. is $\sqrt{2}\,n + 1$. Its common difference is

A $\sqrt{2}$
B $\sqrt{2}\,n$
C 1
D $\sqrt{2} + 1$

Previously asked in: 2026 30/4/1 Q3

◆ **Arithmetic Progressions** 5.3 nth Term of an AP

Q65. § STATISTICS § 13.2 Mean of Grouped Data § 13.4 Median of Grouped Data **[1]**

Assertion (A) : The mean of first 'n' natural numbers is $\frac{n-1}{2}$.
Reason (R): The sum of first 'n' natural numbers is $\frac{n(n+1)}{2}$.
Select the correct answer from the options (A), (B), (C) and (D).

A Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A).
B Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A).
C Assertion (A) is true, but Reason (R) is false.
D Assertion (A) is false, but Reason (R) is true.

Previously asked in: 2026 30/2/1 Q20

◆ **Statistics** 13.2 Mean of Grouped Data 5.4 Sum of First n Terms of an AP

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