

5. ARITHMETIC PROGRESSIONS

1 MARK QUESTIONS

- Find the next term of the AP 5, 2, -1, -4,.... is
(a) -3 (b) -7 (c) -5 (d) -6
- Which term of the AP 3, 15, 27, 39, ... will be 132 more than its 54th term?
- What is the sum of all natural numbers from 1 to 100?
- Which term of the AP, 21,18,15,... is -81?
- Beginning at 8:30 AM, tours of the national capital and the white house begin at a tour agency. Tours for the national capital leave every 15 min. Tours for the white house leave every 20 min. How many minutes after do the tours leave at the same time?
(a) Every 15 min (b) Every 30 min (c) Every 45 min (d) Every 60 min
- Find the value of k, for which $2k + 7$, $6k - 2$ and $8k + 4$ are 3 consecutive terms of an AP.
- Show that the sequence defined by its nth term $\frac{3+n}{4}$, forms an AP. Also, find the common difference of it.
- Find the 25th term of the AP $-5, -\frac{5}{2}, 0, \frac{5}{2}, \dots$
- Determine the AP whose 3rd term is 5 and 7th term is 9.
- If the 5th term of an AP is zero, then 26th term is ... the 12th term is
(a) thrice (b) twice (c) equal (d) None of these.
- If the sum of n terms of an AP is $3n^2 + 5n$, then which of its terms is 164?
- If m times the m th term of an AP is equal to n times its n th term, then show that $(m + n)$ th term of the AP is zero.
- If the n th term of an AP is $3n - 8$, its 16th term is
(a) 20 (b) 30 (c) 40 (d) 50
- If the first three terms of an AP are $x - 1, x + 1, 2x + 3$, then the value of x is
(a) 0 (b) 1 (c) 2 (d) 3
- If $3x, x + 10, 3x + 2$ are in AP, then value of x is
(a) 6 (b) -6 (c) 0 (d) None of these
- If $a_n = 5n - 12$, then $a_{11} - a_{10}$ is
(a) 12 (b) 10 (c) 14 (d) 5
- If the first term of an AP is 2 and common difference is 4, then the sum of its 40 terms is
(a) 3100 (b) 3200 (c) 3300 (d) 3400

18. What is the common difference of an AP in which $T_{18} - T_{14} = 32$?
19. For what value of k will $k+9$, $2k-1$ and $2k+7$ are the consecutive terms of an AP?
20. The sum of the three numbers in AP is 27 and their product is 405. Find the common difference.
21. The maximum sum of the following AP series $20 + 19\frac{1}{3} + 18\frac{2}{2} + 18 + \dots$ is
 (a) 310 (b) 325 (c) 410 (d) 440
22. The 8th term of an AP is 17 and its 14th term is 29. Find the common difference.
23. Determine k , so that 2, 3, k and $5/8 k$ are the three consecutive terms of an AP.
24. Which term of the given AP 2, -1, -4, -7, ... is -40?
 (a) 8th (b) 11th (c) 15th (d) 23rd
25. If p , q and r are in AP, then prove that

$$(p + 2q - r)(2q + r - p)(r + p - q) = 4pqr$$
26. Is 63 a term of the AP: -1, 4, 9, 14, ...?
27. The n th term of the AP $\frac{1}{1.2}, \frac{1}{2.3}, \frac{1}{3.4}$ will be (a) $\frac{1}{n(n+2)}$ (b) $\frac{1}{n(n+1)}$ (c) $\frac{1}{n.2n}$ (d) None of these

ANSWERS

1. b 2. 65th 3. 5050 4. 35th term 5. d
6. 15/2 7. 1/4 8. 55 9. 3, 4, 5, 6, ... 10. a
11. N=27 12. 13. c 14. a 15. $x = 9/2$
16. d 17. b 18. d=8 19. k = 18 20. ± 6 or 11
21. a 22. 2 23. 16/33 24. c 25.
26. No 27. b

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