

CHAPTER-5 | Arithmetic Progressions

QUIZ PART-04

1. In an A.P. with $a = 28$, $d = -4$, and $n = 7$, what is the 7th term?

- A. 4
B. 5
C. 3
D. 7 (A)

Explanation : The nth term formula is

used: $a_n = a + (n-1) \cdot d$ For

$$a=28, d=-4, n=7 \Rightarrow a_7 = 28 + (7-1) \cdot (-4) = 28 - 24 = 4$$

$$a_7 = 28 + (7-1) \cdot (-4) = 28 - 24 = 4$$

2. What is the nth term of the A.P. 5, 2, -1, -4, -7...?

- A. $2n+5$
B. $2n-5$
C. $8-3n$
D. $3n-8$ (C)

Explanation : The nth term formula for this

sequence is $a_n = 8 - 3n$ as the common difference is -3 and the first term is 5.

3. What is the 20th term from the last term of the A.P. 3, 8, 13, ..., 253?

- A. 147
B. 151
C. 154
D. 158 (A)

Explanation : Use the nth term formula, with

$a=3, d=5, l=253$, to find the 20th term from the last. It results in the 20th term being 147.

4. In the A.P. 2, 4, 8, 16, ..., is it an A.P.?

- A. Yes
B. No
C. Only the first three terms
D. Only the even terms (B)

Explanation : The terms are not increasing by a constant difference, so it's not an arithmetic progression.

5. What is the nth term of the A.P. 0, -4, -8, -12, ...?

- A. $-4n$
B. $4n$
C. $-4n+4$
D. $-4n-4$ (A)

Explanation : The common difference is -4, so the nth term is $a_n = -4n$

6. What is the common difference of the A.P. 21, 18, 15, ...?

- A. -3
B. -5
C. 3
D. 5 (A)

Explanation : The common difference is -3.

7. Which term of the A.P. 21, 18, 15, ... is -81?

- A. 30th term
B. 27th term
C. 28th term
D. 26th term (A)

Explanation : Use the nth term formula to calculate the term that equals -81. It turns out to be the 30th term.

8. How many terms are in the A.P. 23, 21, 19, ..., with the last term being 5?

- A. 11
B. 12
C. 13
D. 14 (C)

Explanation : The common difference is -2, so the total number of terms can be calculated using the formula $n = \frac{l-a}{d} + 1$ which results in 13 terms

9. Which of these sequences forms an arithmetic progression?

- A. 2, 5, 8, 11, ...
B. 3, 5, 9, 17, ...
C. 1, 3, 6, 10, ...
D. 5, 10, 15, 20, ... (A)

Explanation : The common difference is 3, so it is an arithmetic progression.

10. What is the 10th term of the A.P. 3, 7, 11, 15, ...?

- A. 30
B. 35
C. 33
D. 38 (B)

Explanation : The nth term is $a_n = a + (n-1) \cdot d$ With $a=3, d=4, n=10$ the 10th term is 35.