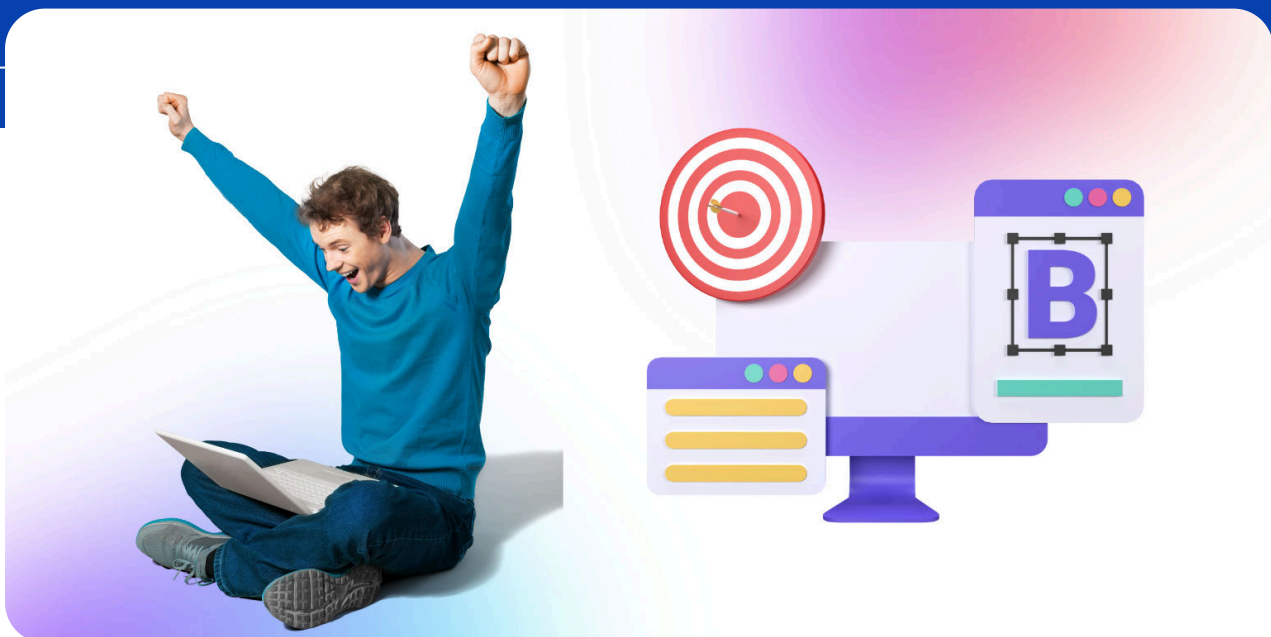# ARITHMETIC SEQUENCE RECURSIVE FORMULA

At first glance, arithmetic sequences might seem like a simple concept, but their importance in mathematics is undeniable. They are pivotal in algebra, number theory, and even calculus. With the help of Edulyte's Maths experts find out how you can gain by knowing about arithmetic sequences and arithmetic sequence recursive formulas.

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Q1: In an arithmetic sequence, what is the common difference between consecutive terms?

A: It varies
B: It's always zero
C: It's constant
D: It's equal to the first term

Q2: What does the recursive formula a(n) = a(n-1) + d represent?

A: An explicit formula
B: A recursive formula for an arithmetic sequence
C: The sum of the first 'n' terms
D: A geometric sequence

Q3: If the first term (a(1)) of an arithmetic sequence is 5 and the common difference (d) is 3, what is the second term (a(2))?

A: 2
B: 8
C: 5
D: 15

Q4: What is the role of the 'common difference' in an arithmetic sequence?

A: It varies.
B: It's always zero.
C: It's constant.
D: It's equal to the first term.

Q5: What is the primary purpose of a recursive formula in an arithmetic sequence?

A: To find the sum of the first 'n' terms.
B: To provide a direct closed-form expression for any term.
C: To describe the step-by-step progression of the sequence.
D: To represent a geometric sequence.

Q6: How is an explicit formula different from a recursive formula for an arithmetic sequence?

A: An explicit formula defines terms in relation to the previous term.
B: An explicit formula is always in the form a(n) = a(1) + (n-1)d.
C: A recursive formula provides a direct closed-form expression for any term.
D: An explicit formula is used to describe the step-by-step progression of the sequence.

Q7: Which of the following best describes an explicit formula for an arithmetic sequence?

A: It defines each term in relation to the previous term.
B: It represents the step-by-step progression of the sequence.
C: It directly calculates any term without reference to previous terms.
D: It always contains a common difference (d).

Q8: What is the formula for the nth term (a(n)) in an arithmetic sequence with a first term 'a' and a common difference 'd'?

A: a(n) = a + nd
B: a(n) = a - nd
C: a(n) = a * d^n
D: a(n) = a / d^n

Q9: In an arithmetic sequence, if the first term (a) is 7 and the fourth term (a(4)) is 19, what is the common difference (d) between consecutive terms?

A: 3
B: 4
C: 5
D: 6

Q10: In an arithmetic sequence with the first term (a) equal to 12 and the common difference (d) equal to 5, what is the 8th term (a(8)) of the sequence?

A: 32
B: 36
C: 37
D: 38

Answers

Q1: C - It's constant

Q2: B - A recursive formula for an arithmetic sequence

Q3: B - 8

Q4: C - It's constant.

Q5: C - To describe the step-by-step progression of the sequence.

Q6: B - An explicit formula is always in the form a(n) = a(1) + (n-1)d.

Q7: C - It directly calculates any term without reference to previous terms.

Q8: A - a(n) = a + nd

Q9: A - 3

Q10: D - 38