Quizlet

AFM Unit 5 - Recursive Functions

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1. **Annuity** — A sequence of equal payments made at equal time periods. An IRA is an example.
2. **Arithmetic Sequence** — A sequence in which the difference between any two consecutive terms is the same.
3. **Common Difference** — The difference between the successive terms of an arithmetic sequence
4. **Common Ratio** — The ratio of successive terms of a geometric sequence.
5. **Factorial Notation** — If n is a positive integer, the notation n! is the product of all positive integers from n down through 1.

   n! = n (n - 1)(n - 2)... (3)(2)(1)

   0! = 1 by definition.
6. **Fibonacci Sequence** — A sequence of numbers in which each number is the sum of the preceding two. 0, 1, 1, 2, 3, 5, 8, 13, 21, . . .
7. **Finite Sequence** — Sequences whose domain consist only of the first n positive integers.
8. **General Term** — Represented by the notation an for the nth term of a sequence.
9. **General Term of a Geometric Sequence** — $a_n = a_1 r^{n-1}$

   Term found by multiplying the previous term by the common ratio.

   an = a₁r^{n-1}
10. **General Term of Arithmetic Sequence** — $a_n = a_1 + (n-1)d$

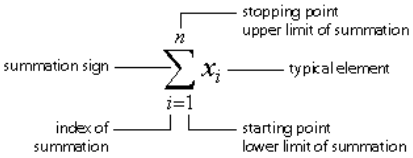
    The nth term of an arithmetic sequence with the first term a1 and the common difference d is

    an = a₁ + (n - 1)d
11. **Geometric Sequence** — A sequence in which the quotient between any two consecutive terms is the same.
12. **Graph of a Sequence** — A set of discrete points.
13. **Index of Summation** — Describes the range of the number of terms for summation notation.
14. **Infinite Geometric Series** — An infinite sum in the form

    a₁ + a₁r + a₁r² + a₁r³ + ... + a₁r^{n-1} + ...

    with the first term a1 and common ratio r.
15. **Infinite Sequence** — A function whose domain is the set of positive integers.
16. **Lower Limit of Summation** — The value of the index placed below the summation symbol.
17. **Multiplier Effect** — A change in a component of total spending leads to a larger change in GDP.
18. **nth Partial Sum of a Geometric Sequence** — $S_n = \frac{a_1(1-r^n)}{1-r}$

    Sn = [a₁(1-r^n)]/(1 - r)
19. **nth Partial Sum of an Arithmetic Sequence** — $S_n = \frac{n(a_1 + a_n)}{2}$

    Sn = [n (a₁ + an)]/2
20. **Recursion Formulas** — Defines the nth term of a sequence as a function of the previous term.
21. **Summation Notation** — 

    The sum of the first n terms of a sequence is represented by Σai = a1 + a2 + a3 + ... + an
22. **Sum of Infinite Geometric Series** — $S_\infty = \frac{a_1}{1 - r}$

    If -1 < r < 1, then the sum of the infinite geometric series is

    s = a₁ / (1 - r)

    If |r| is greater than or equal to 1, the infinite series does not have a sum.
23. **Upper Limit of Summation** — The value of the index placed above the summation symbol.

24. **Value of the Annuity**

$$P = Annuity * \frac{1-(1+r)^{-n}}{r}$$

The sum of all deposits made plus all interest paid.