Title:
A Simplified concise version of the Derivative and Anti Derivative

Abstract:
Traditional calculus defines the derivative as a limit of difference quotients. This paper introduces a new, simplified formulation that employs familiar symbols to make the concept more intuitive. The approach emphasizes that the ratio representing the rate of change approaches a limit as the variable approaches zero.

Introduction

Calculus's fundamental concept—the derivative—is essential yet conceptually challenging. Its classic definition involves a limit process that can be abstract for beginners. To address this, we propose an alternative formulation utilizing common symbols and, emphasizing logical clarity and approachable notation.

The New Formula

Limit X (a + b)) and (c x) divided by d represent expressions analogous to (f(x+h)) and (f(x)). Define:

where:
- (A, B, C) are variables or parameters associated with the function,
- (d) is the small increment approaching zero,
- (L) is the limit (the derivative value).

In essence, this notation states:

"For all small changes (d), the ratio limit

Limit X(a+b) - c x}{d}) approaches a finite limit

Anti Derivative

Definite Integral

This is used to find the original number that gave the derivative rate of change its value, This is new formula is simple to memorize and use to calculate to find the original number.

A(a)-B(b)

The capital A is starting value of the number and captail B is end index number

Why It Works

For example u plug in A is 2 and B is 3 plug both number into the lowercase letter of a and b to find the original number.

- Uses familiar alphabet symbols, making it memorable.
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- The structure clarifies how the rate of change is approached systematically.

Conclusion

This reformulation makes the core idea of the derivative more accessible by replacing symbolic limit notation with common symbols. It fosters intuitive understanding without the essence of the calculus concept.