Relationship Between Derivatives and Integrals (Fundamental Theorem of Calculus)

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(Fundamental Theorem of Calculus)

The Fundamental Theorem of Calculus connects differentiation and integration. It states that:

1. Differentiating the integral of a function gives you back the original function.
2. Integrating the derivative of a function gives you back the original function (up to a constant).
3.

In simpler terms, derivatives and integrals are inverse operations.

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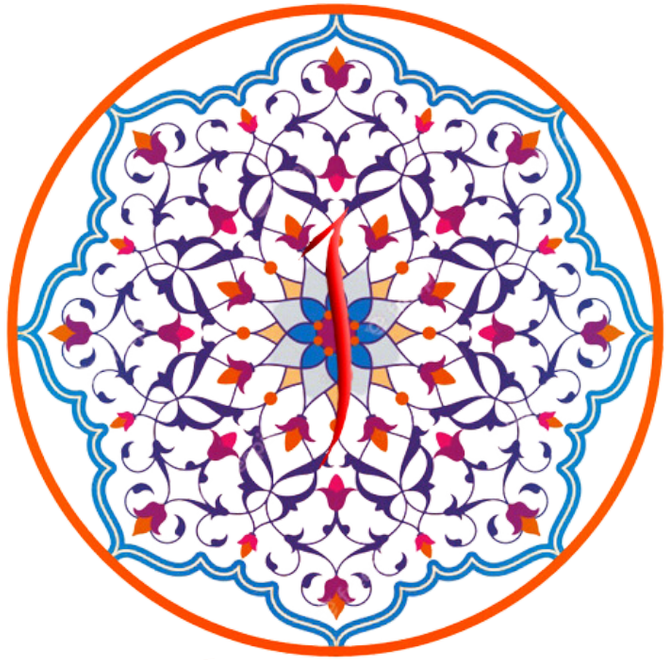
Thank you



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Calculus helps us understand how things change and how they accumulate. The basics include understanding derivatives (slopes, rates of change) and integrals (areas, total accumulation). Both are essential for solving problems involving optimization, motion, growth, and more—especially in fields like physics, economics, and machine learning.