Calculus Made Easy

Beautiful Ideas Presented Simply

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[1]Original Author

[2]Annotator

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Outline

Introducing Calculus Made Easy

Thompson's Treatise for Beginners

- These Slides Are Based on Silvanus Thompson's Book, Calculus Made Easy, Which Introduces Calculus Simply.
- After Quite Some Deliberation, [KM] Chose This Book To Introduce Calculus to Rujuta, A High Schooler.
  - Great Martin Gardner's Thoughtful Recommendation Provided The Biggest Stimulus.
- We Also Go on 'Excursions' Outside The Book.
- Each Chapter Is A Separate Slide-deck to Keep Its Size Manageable.
- It Is Supposed to Be Your "Ready Reckoner".
  - We're All Forgetful. Wouldn't It Be Nice If This Helps You in College or Beyond in Bringing *It* All Back?
- New Words Are Introduced Slowly And Carefully, But "Thought Experiments" Are Often Introduced.
  - Let's Not Be Afraid to Take the Leap of Guided Imagination.

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Assumptions

Because A Slide-deck Is Not as Fun as A Fairy Tale!

- We Wish Mathematics Were Fun to Thinking People Who Enjoy Fairy Tales, Rap Music, or Memes.
  - Sadly, It Isn't!
- However, This Slide-deck Isn't So Great to Make It So!
- We Therefore Expect That:
  - You Want to Explore Calculus of Your Own Accord.
  - You Can Follow Logical (Deductive, Inductive) Arguments.
  - You've Heard of Natural, Rational, Irrational, Real, Complex Numbers.
    - You Understand How a Number Such as $\sqrt{2}$ Differs from a Number Such as 1.737465, 7, or $2 + 3i$.
  - You Understand The Language of School Algebra, And Can Solve Some 'Equations'. Learning Calculus before Algebra Isn't Helpful!
  - You Have Heard of 'Functions', And Know Some of Them (e.g. Polynomial, Rational, Logarithmic, Exponential, and Trigonometric).

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Have Fun!