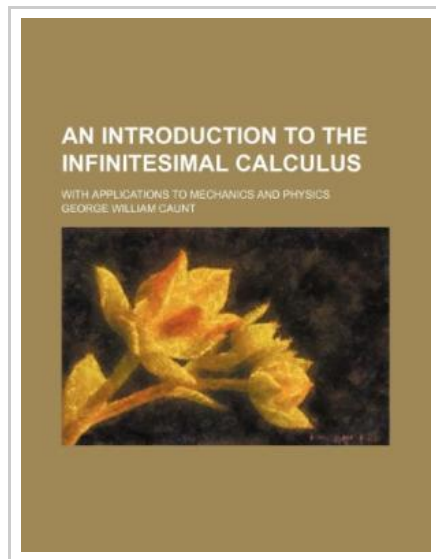




An Introduction to the Infinitesimal Calculus; With Applications to Mechanics and Physics (Paperback)

By George William Caunt

Rarebooksclub.com, United States, 2012. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book ***** Print on Demand *****.This historic book may have numerous typos and missing text. Purchasers can download a free scanned copy of the original book (without typos) from the publisher. Not indexed. Not illustrated. 1914 Excerpt: . $\cos 3x = 1 - x$. 15. Also that $\log(1+x) = x$. 16. Also that $\log(1+\cos a) = \log 2 - x$. 17. Prove, by the method of Arts. 117 and 119, that $f(a+h) = f(a) + f'(a)h + \frac{f''(a)}{2}h^2 + \frac{f'''(a)}{6}h^3 + \dots$, where $0 < h < 1$, provided $f(a)$ and its first 3 differential coefficients are continuous in the interval a to $a+h$. 18. Deduce from the preceding result that $f(x) = f(0) + xf'(0) + \frac{f''(0)}{2}x^2 + \frac{f'''(0)}{6}x^3 + \dots$. 19. Deduce from the result of Question 18 that $\sin a = a - \frac{a^3}{6} + \frac{a^5}{120} - \dots$. 20. Also that $\tan x = x + \frac{1}{3}x^3 + \frac{2}{15}x^5 + \dots$. 21. Deduce from the mean-value theorem that, if two functions have the same derivative, their difference is constant. 22. Discuss the application of the extended mean-value theorem to the function $\log(a-x)$, in the neighbourhood of $x=0$. 23. Also to the function $1 - (1-x)^n$, in the neighbourhood of $x=0$...



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