



## Advanced Calculus: Laplace Transforms

By Edward Walsh

Trafford Publishing, Canada, 2006. Paperback. Book Condition: New. 272 x 208 mm. Language: English . Brand New Book \*\*\*\*\* Print on Demand \*\*\*\*\*.The book starts with the definition of the Laplace Transform and uses it to derive the Laplace Transforms of the elementary functions including; constant functions, polynomial functions, exponential functions, trigonometric functions, and hyperbolic functions. All steps in the derivations of the Laplace Transforms for these functions are included. The concept of the Inverse Laplace Transform is then logically developed from the concept of the Laplace Transform. Numerous examples are provided for finding the Laplace Transforms of the various types of elementary functions and finding their corresponding Inverse Laplace Transforms. The Product Rule is derived with all steps included. Also, the Laplace Transform of a derivative is derived with all steps included. Finally, the following types of differential equations and their initial value problems are solved using both conventional methods and the Laplace Transform method: -First-order homogenous linear differential equations with constant coefficients -First-order non-homogenous linear differential equations with constant coefficients -Second-order homogenous linear differential equations with constant coefficients -Second-order non-homogenous linear differential equations with constant coefficients.



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