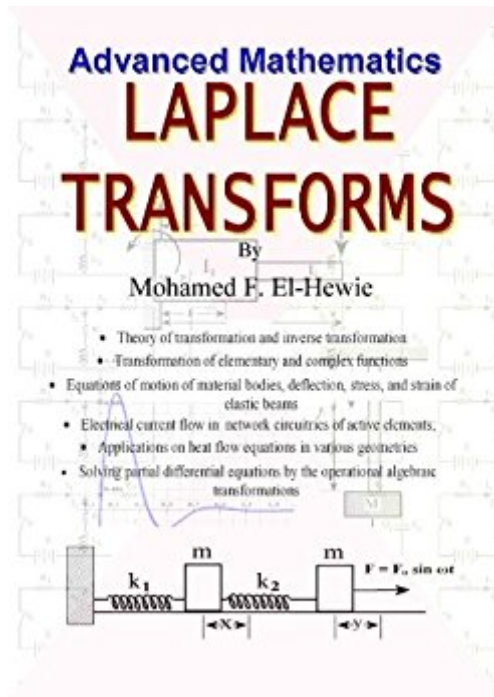


The book was found

Laplace Transform



Synopsis

This is a revised edition of the chapter on Laplace Transforms, which was published few years ago in Part II of My Personal Study Notes in advanced mathematics. In this edition, I typed the cursive scripts of the personal notes, edited the typographic errors, but most of all reproduced all the calculations and graphics in a modern style of representation. The book is organized into six chapters equally distributed to address: (1) The theory of Laplace transformations and inverse transformations of elementary functions, supported by solved examples and exercises with given answers; (2) Transformation of more complex functions from elementary transformation; (3) Practical applications of Laplace transformation to equations of motion of material bodies and deflection, stress, and strain of elastic beams; (4) Solving equations of state of motion of bodies under inertial and gravitational forces. (5) Solving heat flow equations through various geometrical bodies; and (6) Solving partial differential equations by the operational algebraic properties of transforming and inverse transforming of partial differential equations. During the editing process, I added plenty of comments of the underlying meaning of the arcane equations such that the reader could discern the practical weight of each mathematical formula. In a way, I attempted to convey a personal sense and feeling on the significance and philosophy of devising a mathematical equation that transcends into real-life emulation. The reader will find this edition dense with graphic illustrations that should spare the reader the trouble of searching other references in order to infer any missing steps. In my view, detailed graphic illustrations could soothe the harshness of arcane mathematical jargon, as well as expose the merits of the assumption contemplated in the formulation. In lieu of offering a dense textbook on Laplace Transforms, I opted to stick to my personal notes that give the memorable zest of a subject that could easily be remembered when not frequently used.

Brief Outline of Contents:

CHAPTER 1. THE LAPLACE TRANSFORMATION AND INVERSE TRANSFORMATION

1.1. Integral transforms
1.2. Some elementary Laplace transforms
1.3. The Laplace transformation of the sum of two functions
1.4. Sectionally or piecewise continuous functions
1.5. Functions of exponential order
1.7. Null functions
1.8. Inverse Laplace transforms
1.10. Laplace transforms of derivatives
1.11. Laplace transforms of integrals
1.12. The first shift theorem of multiplying the object function by e^{at}
1.15. Determination of the inverse Laplace transforms by the aid of partial fractions
1.16. Laplace's solution of linear differential equations with constant coefficients

CHAPTER 2. GENERAL THEOREMS ON THE LAPLACE TRANSFORMATION

2.1. The unit step function
2.2. The second translation or shifting property
2.4. The unit impulse function
2.5. The unit doublet
2.7. Initial value theorem
2.8. Final value theorem
2.9. Differentiation of transform
2.11. Integration of transforms
2.12. Transforms of periodic

functions 2.13. The product theoremâConvolution 2.15. Power series method for the determination of transforms and inverse transforms 2.16. The error function or probability integral 2.22. The inversion integral CHAPTER 3. ELECTRICAL APPLICATIONS OF THE LAPLACE TRANSFORMATION CHAPTER 4. DYNAMICAL APPLICATIONS OF LAPLACE TRANSFORMS CHAPTER 5. STRUCTURAL APPLICATIONS 5.1. Deflection of beams CHAPTER 6. USING LAPLACE TRANSFORMATION IN SOLVING LINEAR PARTIAL DIFFERENTIAL EQUATIONS 6.1. Transverse vibrations of a stretched string under gravity 6.2. Longitudinal vibrations of bars 6.3. Partial differential equations of transmission lines 6.4. Conduction of heat 6.5. Exercise on using Laplace Transformation in solving Linear Partial Differential EquationsLaplace transform, electric current, heat flow, partial diff equation, equation of motion

Book Information

File Size: 10529 KB

Print Length: 624 pages

Publication Date: April 16, 2013

Sold by:Â Digital Services LLC

Language: English

ASIN: B00CEGZYGI

Text-to-Speech: Enabled

X-Ray: Not Enabled

Word Wise: Not Enabled

Lending: Not Enabled

Enhanced Typesetting: Not Enabled

Best Sellers Rank: #1,223,509 Paid in Kindle Store (See Top 100 Paid in Kindle Store) #23

inÂ Kindle Store > Kindle eBooks > Nonfiction > Science > Mathematics > Transformations #59

inÂ Books > Science & Math > Mathematics > Transformations

Customer Reviews

This is one of those self published little gems, but unlike so many others, has a LOT of value if you can organize it yourself. First, there is no index, so the 150 or so worked problems flow generally from the chapters, but for specifics you'll have to create your own index if you want to use it as a reference work. Second, the Chapter titles at the beginning are very general, and don't agree with the Intro (which says, for example, that 4 is about electrical current flow (meaning "topic" 4) in circuits, whereas CHAPTER 4 is actually about strings, dynamic systems, etc.The formulas and

solutions are high quality, with few errors, and have plenty of diagrams. Despite the promotional reviews there are NOT really a lot of verbal descriptions, because the book moves at a very rapid pace from example to example in order to pack at least one or two examples of each type of problem in 300 pages. The author does use the solution notation convention so later problems do refer back to previous exercises. In summary, these are the class notes of a very bright mathematician, and show the sub steps for each technique quite clearly, as long as you know the symbols and understand the operations, which are not explained in detail. Not a lot of space is spent on inverses, which are really the toughest part of transform operators, but the problems selected solve quite clearly without the need for highly complex inversion manipulations. Some of the applications covered include solutions of PDE's, electrical applications, structural and dynamic applications, and of course equations of motion, waves, vibrating strings, etc. For the price, a lot of good worked examples if you can get around the lack of indexing.

[Download to continue reading...](#)

Laplace Transform An Introduction to Laplace Transforms and Fourier Series (Springer Undergraduate Mathematics Series) If You Change Your Words It Will Transform Your Life Sacred Rhythms Participant's Guide: Spiritual Practices that Nourish Your Soul and Transform Your Life Data Analytics: Practical Data Analysis and Statistical Guide to Transform and Evolve Any Business Leveraging the Power of Data Analytics, Data Science, ... (Hacking Freedom and Data Driven Book 2) The Definitive Guide To the Best Way to Turn Your Nook HD+ Into a Full Android Tablet (The Best Way To Transform Your Nook Into a Full Android Tablet Book 1) The Definitive Guide To the Best Way to Turn Your Nook HD Into a Full Android Tablet (The Best Way To Transform Your Nook Into a Full Android Tablet Book 2) It's All Greek to Me: Transform Your Health the Mediterranean Way with My Family's Century-Old Recipes The Plan: Eat Well Lose Weight Transform Your Life Small-Space Container Gardens: Transform Your Balcony, Porch, or Patio with Fruits, Flowers, Foliage, and Herbs 30 Days to a Clean and Organized House: A complete guide to transform your home on your schedule, and a monthly plan to KEEP it clean! Black & Decker The Complete Photo Guide to Home Decorating Projects: DIY Projects to Transform Walls, Windows, Furniture, Floors & More (Black & Decker Complete Photo Guide) Reinventing Ikea: 70 DIY Projects to Transform Ikea Essentials The Wonders of Water - How H₂O Can Transform Your Life: Vitality, Detox, Weight Loss, Quality Water, Benefits (Water Health, Vitality, Weight Loss, Fruit Infused Book 1) The Blood Type Diet Cookbook: 100 Fresh and Delicious Recipes to Transform your Health and your Life! The Beauty Detox Foods: Discover the Top 50 Beauty Foods That Will Transform Your Body and Reveal a More Beautiful You Bone Broth Breakthrough: Transform Your Body with Bone Broth

Protein, the Ultimate Food to Support Gut Health, Metabolism, Lean Muscle, Joints and Glowing Skin Committed to Wellness, Fitness and a Healthy Lifestyle: How to Unleash Your Inner Motivation, Change Your Mindset and Transform Your Body Fast! Meal Prep for Weight Loss: Transform Your Body By Batch Cooking Easy Healthy Meals the IIFYM Way (If It Fits Your Macros Meal Prepping) You Can Think Yourself Thin: Transform Your Shape with Hypnosis

[Dmca](#)