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## Mathematical Foundations for Linear Circuits and Systems in Engineering (Hardback)

By John J. Shynk

John Wiley Sons Inc, United States, 2016. Hardback. Condition: New. Language: English . Brand New Book. Extensive coverage of mathematical techniques used in engineering with an emphasis on applications in linear circuits and systems Mathematical Foundations for Linear Circuits and Systems in Engineering provides an integrated approach to learning the necessary mathematics specifically used to describe and analyze linear circuits and systems. The chapters develop and examine several mathematical models consisting of one or more equations used in engineering to represent various physical systems. The techniques are discussed in-depth so that the reader has a better understanding of how and why these methods work. Specific topics covered include complex variables, linear equations and matrices, various types of signals, solutions of differential equations, convolution, filter designs, and the widely used Laplace and Fourier transforms. The book also presents a discussion of some mechanical systems that mathematically exhibit the same dynamic properties as electrical circuits. Extensive summaries of important functions and their transforms, set theory, series expansions, various identities, and the Lambert W-function are provided in the appendices. The book has the following features: Compares linear circuits and mechanical systems that are modeled by similar ordinary differential equations, in order to provide...



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