

Amplitude Modulation Simulation Lab Using Multisim

Martin Webb



Amplitude Modulation Simulation Lab Using Multisim:

Technological Developments in Education and Automation Magued Iskander, Vikram Kapila, Mohammad A. Karim, 2010-01-30 Technological Developments in Education and Automation includes set of rigorously reviewed world class manuscripts dealing with the increasing role of technology in daily lives including education and industrial automation Technological Developments in Education and Automation contains papers presented at the International Conference on Industrial Electronics Technology Automation and the International Conference on Engineering Education Instructional Technology Assessment and E learning which were part of the International Joint Conferences on Computer Information and Systems Sciences and Engineering *Quadrature Amplitude Modulation (QAM/DQAM)*. ,2007 **Quadrature Amplitude Modulation (QAM/DQAM)** Lab-Volt (Quebec) Ltd, 2007-01-01 **Modern Quadrature Amplitude Modulation** William Webb, Lajos Hanzo, 1994 *Simulation of Performance of M-QAM Quadrature Amplitude Modulation* Hervens Beauge, 2008

PSpice for Analog Communications Engineering Paul Tobin, 2007-06-01 In PSpice for Analog Communications Engineering we simulate the difficult principles of analog modulation using the superb free simulation software Cadence Orcad PSpice V10 5 While use is made of analog behavioral model parts ABM we use actual circuitry in most of the simulation circuits For example we use the 4 quadrant multiplier IC AD633 as a modulator and import real speech as the modulating source and look at the trapezoidal method for measuring the modulation index Modulation is the process of relocating signals to different parts of the radio frequency spectrum by modifying certain parameters of the carrier in accordance with the modulating information signals In amplitude modulation the modulating source changes the carrier amplitude but in frequency modulation it causes the carrier frequency to change and in phase modulation it is the carrier phase The digital equivalent of these modulation techniques are examined in PSpice for Digital communications Engineering where we examine QAM FSK PSK and variants We examine a range of oscillators and plot Nyquist diagrams showing the marginal stability of these systems The superhetrodyne principle the backbone of modern receivers is simulated using discrete components followed by simulating complete AM and FM receivers In this exercise we examine the problems of matching individual stages and the use of double tuned RF circuits to accommodate the large FM signal bandwidth

Design and Simulation of Generalized Quadrature Amplitude Modulation Scheme Bernard Leerkes, 2008

Single- and Multi-carrier Quadrature Amplitude Modulation Lajos L. Hanzo, William Webb, Thomas Keller, 2000-06-21 Single and Multi carrier Quadrature Amplitude Modulation Principles and Applications for Personal Communications WLANs and Broadcasting L Hanzo Department of Electronics and Computer Science University of Southampton UK W Webb Motorola Arlington Heights USA formerly at Multiple Access Communications Ltd Southampton UK T Keller Ubintetics Cambridge Technology Centre Melbourn UK formerly at Department of Electronics and Computer Science University of Southampton UK Motivated by the rapid evolution of wireless communication systems this expanded

second edition provides an overview of most major single and multi carrier Quadrature Amplitude Modulation QAM techniques commencing with simple QAM schemes for the uninitiated through to complex rapidly evolving areas such as arrangements for wide band mobile channels Targeted at the more advanced reader the multi carrier modulation based second half of the book presents a research orientated outlook using a variety of novel QAM based arrangements Features six new chapters dealing with the complexities of multi carrier modulation which has found applications ranging from Wireless Local Area Networks WLAN to Digital Video Broadcasting DVB Provides a rudimentary introduction for readers requiring a background in the field of modulation and radio wave propagation Discusses classic QAM transmission issues relevant to Gaussian channels Examines QAM based transmissions over mobile radio channels Incorporates QAM related orthogonal techniques considers the spectral efficiency of QAM in cellular frequency re use structures and presents a QAM based speech communications system design study Introduces Orthogonal Frequency Division Multiplexing OFDM over both Gaussian and wideband fading channels By providing an all encompassing self contained treatment of single and multi carrier QAM based communications a wide range of readers including senior undergraduate and postgraduate students practising engineers and researchers alike will all find the coverage of this book attractive

Modulation Theory Marcelo Sampaio de Alencar, 2022-09-01 In recent years a considerable amount of effort has been devoted both in industry and academia towards the design performance analysis and evaluation of modulation schemes to be used in wireless and optical networks towards the development of the next and future generations of mobile cellular communication systems Modulation Theory is intended to serve as a complementary textbook for courses dealing with Modulation Theory or Communication Systems but also as a professional book for engineers who need to update their knowledge in the communications area The modulation aspects presented in the book use modern concepts of stochastic processes such as autocorrelation and power spectrum density which are novel for undergraduate texts or professional books and provides a general approach for the theory with real life results applied to professional design This text is suitable for the undergraduate as well as the initial graduate levels of Electrical Engineering courses and is useful for the professional who wants to review or get acquainted with the a modern exposition of the modulation theory The books covers signal representations for most known waveforms Fourier analysis and presents an introduction to Fourier transform and signal spectrum including the concepts of convolution autocorrelation and power spectral density for deterministic signals It introduces the concepts of probability random variables and stochastic processes including autocorrelation cross correlation power spectral and cross spectral densities for random signals and their applications to the analysis of linear systems This chapter also includes the response of specific non linear systems such as power amplifiers The book presents amplitude modulation with random signals including analog and digital signals and discusses performance evaluation methods presents quadrature amplitude modulation using random signals Several modulation schemes are discussed including SSB QAM ISB C QUAM QPSK and MSK Their autocorrelation

and power spectrum densities are computed A thorough discussion on angle modulation with random modulating signals along with frequency and phase modulation and orthogonal frequency division multiplexing is provided Their power spectrum densities are computed using the Wiener Khintchin theorem

Amplitude Modulation of Synchronized Microwave Oscillators W. P. Schneider,Edward E. David,1950 **Modern Quadrature Amplitude Modulation** Martin Webb,1994-09-12 **Emona-based Interactive Amplitude Modulation/demodulation ILab** Edison M.

Achelengwa,Massachusetts Institute of Technology. Department of Electrical Engineering and Computer Science,2011 The MIT iLab Project has developed online laboratories iLabs which are lab stations that can be accessed and controlled remotely over the Internet With iLabs students can conduct real experiments on real equipment over the Internet With the introduction of the National Instrument s Educational Laboratory Virtual Instrument Suite NI ELVIS in the development of iLabs students to gain a better understanding of engineering concepts by obtaining real data from electronic labs One of such crucial engineering concepts is telecommunications which plays a key role in transmitting information between people systems and computers There are many telecommunication schemes which exist today The iLab developed in this thesis implements an experiment for studying one of such schemes Amplitude Modulation The NI ELVIS is used together with a device called the Emona Digital and Analog Telecommunications Experimenter DATEX to achieve the Amplitude Modulation lab setup This iLab is an Interactive iLab which gives one student at a time complete real time control over the lab set up The Amplitude Modulation iLab will permit students to tune various controls and observe the behavior and changes of relevant signals both in time domain and frequency domain It will also permit students to compare different signals and retrieve data locally for post processing

Frequency Modulation Theory Jacques Fagot,Philippe Magne,2014-07-03 Electronics and Instrumentation Volume 11 Frequency Modulation Theory Application to Microwave Links provides information pertinent to the fundamental aspects of microwave beam techniques This book discusses the development in the application of frequency modulation Organized into five chapters this volume begins with an overview of the transfer of the radio frequency energy over a given path This text then examines all the general problems of frequency modulation including principle band covered distortion and improvement of the signal to noise ratio Other chapters deal with propagation distortion that is apparent in a variable velocity guided transmission channel This book discusses as well the complete problem of telephony and television transmission over radio links and considers the requisite conditions for meeting the international standards The final chapter deals with all the applied techniques concerned with radio link equipment that deals with a large number of general problems This book is a valuable resource for students and engineers

Single and Multi-Carrier Quadrature

Amplitude Modulation L. Hanzo,2001-05 Amplitude Modulation Detection Using Digital Signal Processing Jeffrey C. Hudson,1995 **Amplitude Modulation at 9000 Megacycles Using Ferrites** Charles J. Truax,1955 **Understanding**

Amplitude Modulation Irving M. Gottlieb,1966 *Predistortion of Quadrature Amplitude Modulation Signals Using*

Volterra Series Approximation Michael T. Donovan, 1996-12-01 Modern digital communication systems are being called upon to move ever increasing amounts of information over decreasingly available bandwidth This requires that communication systems employ bandwidth efficient modulation schemes to conserve bandwidth while moving the information at higher data rates A major stumbling block to using higher order modulation schemes in long haul communication is the distortion caused by high power amplifiers These high power amplifiers are required to amplify the signal power to a level that will allow distant receivers to correctly demodulate and decode the information The distortion caused by the high power amplifiers can render a modulation scheme unusable due to the high symbol error rates which result from the extensive skewing of the modulation scheme s signal constellation This thesis details a predistortion technique using Volterra series approximation techniques to model the inverse of the high power amplifier s distortion characteristics A 64 Quadrature Amplitude Modulation 64 QAM system incorporating a predistorter is used to demonstrate the ability to achieve acceptable bit error rates The implementation of the inverse model and the communication system is performed in MATLAB The results show the viability of predistortion of digital data to allow the higher order modulation schemes to be incorporated into communication schemes increasing the overall data rate while conserving bandwidth

Optimum Amplitude Modulation Thomas Ericson, 1974

Amplitude Modulation DeVry Institute of Technology, Bell & Howell Schools, 1969

Yeah, reviewing a books **Amplitude Modulation Simulation Lab Using Multisim** could increase your close connections listings. This is just one of the solutions for you to be successful. As understood, triumph does not recommend that you have astounding points.

Comprehending as with ease as arrangement even more than additional will find the money for each success. bordering to, the revelation as skillfully as keenness of this Amplitude Modulation Simulation Lab Using Multisim can be taken as skillfully as picked to act.

<https://py.bijouxmedusa.com/files/publication/HomePages/basics%20review%20united%20states%2069%201002%20machine%20learning%20basics%20review%20for.pdf>

Table of Contents Amplitude Modulation Simulation Lab Using Multisim

1. Understanding the eBook Amplitude Modulation Simulation Lab Using Multisim
 - The Rise of Digital Reading Amplitude Modulation Simulation Lab Using Multisim
 - Advantages of eBooks Over Traditional Books
2. Identifying Amplitude Modulation Simulation Lab Using Multisim
 - Exploring Different Genres
 - Considering Fiction vs. Non-Fiction
 - Determining Your Reading Goals
3. Choosing the Right eBook Platform
 - Popular eBook Platforms
 - Features to Look for in an Amplitude Modulation Simulation Lab Using Multisim
 - User-Friendly Interface
4. Exploring eBook Recommendations from Amplitude Modulation Simulation Lab Using Multisim
 - Personalized Recommendations
 - Amplitude Modulation Simulation Lab Using Multisim User Reviews and Ratings
 - Amplitude Modulation Simulation Lab Using Multisim and Bestseller Lists

5. Accessing Amplitude Modulation Simulation Lab Using Multisim Free and Paid eBooks
 - Amplitude Modulation Simulation Lab Using Multisim Public Domain eBooks
 - Amplitude Modulation Simulation Lab Using Multisim eBook Subscription Services
 - Amplitude Modulation Simulation Lab Using Multisim Budget-Friendly Options
6. Navigating Amplitude Modulation Simulation Lab Using Multisim eBook Formats
 - ePub, PDF, MOBI, and More
 - Amplitude Modulation Simulation Lab Using Multisim Compatibility with Devices
 - Amplitude Modulation Simulation Lab Using Multisim Enhanced eBook Features
7. Enhancing Your Reading Experience
 - Adjustable Fonts and Text Sizes of Amplitude Modulation Simulation Lab Using Multisim
 - Highlighting and Note-Taking Amplitude Modulation Simulation Lab Using Multisim
 - Interactive Elements Amplitude Modulation Simulation Lab Using Multisim
8. Staying Engaged with Amplitude Modulation Simulation Lab Using Multisim
 - Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers Amplitude Modulation Simulation Lab Using Multisim
9. Balancing eBooks and Physical Books Amplitude Modulation Simulation Lab Using Multisim
 - Benefits of a Digital Library
 - Creating a Diverse Reading Collection Amplitude Modulation Simulation Lab Using Multisim
10. Overcoming Reading Challenges
 - Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
11. Cultivating a Reading Routine Amplitude Modulation Simulation Lab Using Multisim
 - Setting Reading Goals Amplitude Modulation Simulation Lab Using Multisim
 - Carving Out Dedicated Reading Time
12. Sourcing Reliable Information of Amplitude Modulation Simulation Lab Using Multisim
 - Fact-Checking eBook Content of Amplitude Modulation Simulation Lab Using Multisim
 - Distinguishing Credible Sources
13. Promoting Lifelong Learning

- Utilizing eBooks for Skill Development
 - Exploring Educational eBooks
14. Embracing eBook Trends
- Integration of Multimedia Elements
 - Interactive and Gamified eBooks

Amplitude Modulation Simulation Lab Using Multisim Introduction

In this digital age, the convenience of accessing information at our fingertips has become a necessity. Whether its research papers, eBooks, or user manuals, PDF files have become the preferred format for sharing and reading documents. However, the cost associated with purchasing PDF files can sometimes be a barrier for many individuals and organizations. Thankfully, there are numerous websites and platforms that allow users to download free PDF files legally. In this article, we will explore some of the best platforms to download free PDFs. One of the most popular platforms to download free PDF files is Project Gutenberg. This online library offers over 60,000 free eBooks that are in the public domain. From classic literature to historical documents, Project Gutenberg provides a wide range of PDF files that can be downloaded and enjoyed on various devices. The website is user-friendly and allows users to search for specific titles or browse through different categories. Another reliable platform for downloading Amplitude Modulation Simulation Lab Using Multisim free PDF files is Open Library. With its vast collection of over 1 million eBooks, Open Library has something for every reader. The website offers a seamless experience by providing options to borrow or download PDF files. Users simply need to create a free account to access this treasure trove of knowledge. Open Library also allows users to contribute by uploading and sharing their own PDF files, making it a collaborative platform for book enthusiasts. For those interested in academic resources, there are websites dedicated to providing free PDFs of research papers and scientific articles. One such website is Academia.edu, which allows researchers and scholars to share their work with a global audience. Users can download PDF files of research papers, theses, and dissertations covering a wide range of subjects. Academia.edu also provides a platform for discussions and networking within the academic community. When it comes to downloading Amplitude Modulation Simulation Lab Using Multisim free PDF files of magazines, brochures, and catalogs, Issuu is a popular choice. This digital publishing platform hosts a vast collection of publications from around the world. Users can search for specific titles or explore various categories and genres. Issuu offers a seamless reading experience with its user-friendly interface and allows users to download PDF files for offline reading. Apart from dedicated platforms, search engines also play a crucial role in finding free PDF files. Google, for instance, has an advanced search feature that allows users to filter results by file type. By specifying the file type as "PDF," users can find websites that offer free PDF downloads on a specific topic. While downloading

Amplitude Modulation Simulation Lab Using Multisim free PDF files is convenient, its important to note that copyright laws must be respected. Always ensure that the PDF files you download are legally available for free. Many authors and publishers voluntarily provide free PDF versions of their work, but its essential to be cautious and verify the authenticity of the source before downloading Amplitude Modulation Simulation Lab Using Multisim. In conclusion, the internet offers numerous platforms and websites that allow users to download free PDF files legally. Whether its classic literature, research papers, or magazines, there is something for everyone. The platforms mentioned in this article, such as Project Gutenberg, Open Library, Academia.edu, and Issuu, provide access to a vast collection of PDF files. However, users should always be cautious and verify the legality of the source before downloading Amplitude Modulation Simulation Lab Using Multisim any PDF files. With these platforms, the world of PDF downloads is just a click away.

FAQs About Amplitude Modulation Simulation Lab Using Multisim Books

1. Where can I buy Amplitude Modulation Simulation Lab Using Multisim books? Bookstores: Physical bookstores like Barnes & Noble, Waterstones, and independent local stores. Online Retailers: Amazon, Book Depository, and various online bookstores offer a wide range of books in physical and digital formats.
2. What are the different book formats available? Hardcover: Sturdy and durable, usually more expensive. Paperback: Cheaper, lighter, and more portable than hardcovers. E-books: Digital books available for e-readers like Kindle or software like Apple Books, Kindle, and Google Play Books.
3. How do I choose a Amplitude Modulation Simulation Lab Using Multisim book to read? Genres: Consider the genre you enjoy (fiction, non-fiction, mystery, sci-fi, etc.). Recommendations: Ask friends, join book clubs, or explore online reviews and recommendations. Author: If you like a particular author, you might enjoy more of their work.
4. How do I take care of Amplitude Modulation Simulation Lab Using Multisim books? Storage: Keep them away from direct sunlight and in a dry environment. Handling: Avoid folding pages, use bookmarks, and handle them with clean hands. Cleaning: Gently dust the covers and pages occasionally.
5. Can I borrow books without buying them? Public Libraries: Local libraries offer a wide range of books for borrowing. Book Swaps: Community book exchanges or online platforms where people exchange books.
6. How can I track my reading progress or manage my book collection? Book Tracking Apps: Goodreads, LibraryThing, and Book Catalogue are popular apps for tracking your reading progress and managing book collections. Spreadsheets: You can create your own spreadsheet to track books read, ratings, and other details.

7. What are Amplitude Modulation Simulation Lab Using Multisim audiobooks, and where can I find them? Audiobooks: Audio recordings of books, perfect for listening while commuting or multitasking. Platforms: Audible, LibriVox, and Google Play Books offer a wide selection of audiobooks.
8. How do I support authors or the book industry? Buy Books: Purchase books from authors or independent bookstores. Reviews: Leave reviews on platforms like Goodreads or Amazon. Promotion: Share your favorite books on social media or recommend them to friends.
9. Are there book clubs or reading communities I can join? Local Clubs: Check for local book clubs in libraries or community centers. Online Communities: Platforms like Goodreads have virtual book clubs and discussion groups.
10. Can I read Amplitude Modulation Simulation Lab Using Multisim books for free? Public Domain Books: Many classic books are available for free as they're in the public domain. Free E-books: Some websites offer free e-books legally, like Project Gutenberg or Open Library.

Find Amplitude Modulation Simulation Lab Using Multisim :

[basics review United States 69-1002 machine learning basics review for](#)

study for small business 69-1305 fitness routines checklist America

[growth tips for small business 69-2935 Instagram growth tips for](#)

[startups 69-907 passive income ideas checklist America 69-790 passive](#)

[chatbot development for beginners for startups 69-211 chatbot](#)

blueprint for small business 69-2669 affiliate marketing blueprint for

[ecommerce trends step by step for startups 69-1865 ecommerce trends](#)

[69-568 dropshipping business checklist United States 69-2384](#)

America 69-1565 mobile app ideas comparison USA 69-2210 mobile app ideas

[69-2372 smart home tech ideas for entrepreneurs 69-801 smart home tech](#)

personal finance best practices USA 69-883 personal finance best

[69-314 mobile app ideas roadmap for startups 69-1135 mobile app ideas](#)

[business 69-2831 electric vehicles case study for entrepreneurs 69-2617](#)

[States 69-549 cybersecurity for beginners America 69-1015 cybersecurity](#)

wearable technology roadmap United States 69-1593 wearable technology

Amplitude Modulation Simulation Lab Using Multisim :

End of Course US History Vocabulary Flashcards Study with Quizlet and memorize flashcards containing terms like free enterprise system, interstate commerce act, laissez-faire and more. End Of Course Us History Vocabulary Answer Key vocabulary, this complete course presents Latin grammar. Page 5. End Of Course Us History Vocabulary Answer Key end-of-course-us-history-vocabulary-answer-key. End of course us history vocabulary Flashcards Study with Quizlet and memorize flashcards containing terms like Industrialization, Free interprise system, Interstate commerce act and more. David Ortiz - EOC-US-History-Vocabulary-Review 1 .docx View David Ortiz - EOC-US-History-Vocabulary-Review (1).docx from HISTORY MISC at River Road H S. End of Course US History Vocabulary _ Name Industrialization_ End of course us history vocabulary all answers 100 Access over 20 million homework & study documents · End of course us history vocabulary all answers 100 · Ongoing Conversations. EOC-US-History-Vocabulary-Review 8 .docx - End of ... View EOC-US-History-Vocabulary-Review (8).docx from HISTORY MISC at South Texas Academy For Medical Professions. End of Course US History Vocabulary ... STAAR U.S. History Vocabulary.com's STAAR U.S. History lists cover many of the essential terms and concepts that you'll be expected to know on test day. Notes End of Course US History Vocabulary Study guides, Class notes & Summaries · End of Course US History Vocabulary ALL ANSWERS 100% CORRECT SPRING FALL 2023/24 EDITION GUARANTEED GRADE A+ · And that's ... End Of Course Us History Vocabulary Imperialism Aug 22, 2023 — In a world defined by information and interconnectivity, the enchanting power of words has acquired unparalleled significance. Essentials of Epidemiology in Public Health: 9781284128352 Essentials of Epidemiology in Public Health, Fourth Edition combines theory and practice in presenting traditional and new epidemiologic concepts. Essentials of Epidemiology in Public Health Essentials of Epidemiology in Public Health, Fourth Edition combines theory and practice in presenting traditional and new epidemiologic concepts. Navigate eBook Access for Essentials of Epidemiology in ... Navigate eBook Access to Essentials of Epidemiology in Public Health, Fourth Edition is a digital-only, eBook with 365 day access. Essentials of Epidemiology in Public Health Up-to-date examples from the epidemiologic literature on diseases of public health importance are provided throughout the book. The Third Edition is a thorough ... Essentials of Epidemiology in Public Health, 2nd Edition Successfully tested in the authors' courses at Boston University and Harvard University, this text combines theory and practice in presenting traditional ... Essentials of Epidemiology in Public Health Essentials of Epidemiology in Public Health, Second Edition will familiarize readers with terminology and key concepts in the design, analysis, and ... (PDF) ESSENTIALS OF FOURTH EDITION | Chelsea Gould These criticisms assume that epidemiology is a system of knowledge about health and disease, based on observation. In fact, consensus on the definition of the ... Third Edition of 'Essentials of Epidemiology in Public ... The best-selling “Essentials of Epidemiology in Public Health” has been used in more than 100 graduate programs across the country. It was co-authored by George ... Essentials of Epidemiology in Public Health Essentials of Epidemiology in Public Health,

Fourth Edition combines theory and practice in presenting traditional and new epidemiologic concepts. Essentials of Epidemiology in Public Health Essentials of Epidemiology in Public Health, Fourth Edition combines theory and practice in presenting traditional and new epidemiologic concepts. Fundamental Accounting Principles 21st Edition Study Guide Volume 2 - Chapters 12-25 for Fundamental Accounting Principles, 21st edition (Wild/Shaw/Chiappetta). by Chiappetta/Walczak. Principles of Financial Accounting (Chapters 1-17) 21st ... Principles of Financial Accounting (Chapters 1-17) 21st (twenty-first) by Wild, John, Shaw, Ken, Chiappetta, Barbara (2012) Hardcover ; Arrives after Christmas. Fundamental Accounting Principles, 21st Edition by Wild ... Textbook. Publication Name. Principle of Financial Accounting. Educational Level. College. Author. John J. Wild, Ken W. Shaw, Barbara Chiappetta. Subject. Fundamental Accounting Principles Get the 25e of Fundamental Accounting Principles by John Wild, Ken Shaw and Kermit Larson Textbook, eBook, and other options. ISBN 9781260247985. Principles of Financial Accounting 21st Edition, John Wild Textbook solutions for Principles of Financial Accounting 21st Edition John Wild and others in this series. View step-by-step homework solutions for your ... Fundamental Accounting Principles Volume 1. 21st Edition. ... Fundamental Accounting Principles Volume 1. 21st Edition. Wild, Shaw, Chiappetta ; Binding. Hardcover ; Product Group. Book ; Accurate description. 4.9 ; Reasonable ... Fundamental Accounting Principles - Text Only - 21st edition Buy Fundamental Accounting Principles - Text Only 21st edition (9780078025587) by John Wild for up to 90% off at Textbooks.com. John Wild | Get Textbooks Fundamental Accounting Principles(21st Edition) by John Wild, Ken Shaw Accounting Professor, Barbara Chiappetta Hardcover, 1,216 Pages, Published 2012 by ... Fundamental Accounting Principles 21st Edition Wild ... Fundamental Accounting Principles 21st Edition Wild Solutions Manual - Free download as PDF File (.pdf), Text File (.txt) or read online for free. Fundamental Accounting Principles:... book by John J. Wild Fundamental Accounting Principles ; International Business: The Challenges of Globalization ; Financial and Managerial Accounting: Information for Decisions.