Linear Algebra Labs with MATLAB (3rd Edition)

By Hill, David; Zitarelli, David

Pearson, 2003. Book Condition: New. Brand New, Unread Copy in Perfect Condition. A+ Customer Service! Summary: This work has two primary parts. One consists of the 13 LABS and three Projects in this manual. The other is a set of instructional M-files that harness the power of the software package MATLAB to render it appropriate for an educational setting. The LABS and Projects are meant to supplement a standard sophomore level course in linear algebra. They follow the general outline for such a course, introducing instructional routines and appropriate MATLAB commands to solve problems related to each concept. Our primary goal is to use the laboratory experiences to aid in understanding the basic ideas of linear algebra. As such we use instructional M-files that provide a tool kit for working with linear algebra without the need for programming in the MATLAB command set. Although no programming background is assumed, those students with computing skills can further enhance their skills within MATLAB. We have found that students initially rely on the tool kit, but many quickly begin to use MATLAB commands directly, even though we provide little formal instruction in this area. We recommend an instructional approach that integrates the language...

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the most frequently occurring problems in numerical linear algebra • Examples from engineering and science applications DESCRIPTION • Contains all the material necessary for a first year graduate or advanced undergraduate course on numerical linear algebra with numerous applications to engineering and science. It provides necessary mathematical background information for those who want to learn to solve linear algebra problems, and offers a thorough explanation of the issues and methods for practical computing, using MATLAB as the vehicle for computation. The proofs of required results are pro Relevant to Linear Algebra. By Stormy Attaway. Reference: Stormy Attaway, MATLAB: A Practical Introduction to Programming and Problem Solving, pp.452+x, Burlington, MA, Elsevier Inc., 2009. MATLAB Basics. MATLAB is written to work with vectors and matrices; the name MATLAB is short for "Matrix Laboratory". A matrix looks like a table with rows and columns; an m by n (or m x n) matrix has m rows by n columns (these are the dimensions of the matrix). Vectors are a special case in which one of the dimensions is 1: a row vector is a single row, or in other words it is 1 by n (1 row by n columns), and a column vector is m by 1 (m rows by 1 column). The LABS and Projects are meant to supplement a standard sophomore level course in linear algebra. They follow the general outline for such a course, introducing instructional routines and appropriate MATLAB commands to solve problems related to each concept. Our primary goal is to use the laboratory experiences to aid in understanding the basic ideas of linear algebra. As such we use instructional M-files that provide a tool kit for working with linear algebra without the need for programming in the MATLAB command set. Although no programming background is assumed, those students with computi Each "lab" addresses a topic in linear algebra (e.g., vector spaces) or an extended application of linear algebra (e.g., several labs discuss differential equations and another is devoted to graph theory and the adjacency matrix). The projects consist of additional applications of the material taught in the labs for that chapter; they are do-it-yourself affairs, each broken up into subparts that the reader is to work through, often using MATLAB. After an initial lab discussing MATLAB, the book covers all the standard topics in linear algebra: matrices and their arithmetic, determinants, vector spaces, linear transformations, inner product spaces, etc.

Relevant to Linear Algebra. By Stormy Attaway. Reference: Stormy Attaway, MATLAB: A Practical Introduction to Programming and Problem Solving, pp.452+x, Burlington, MA, Elsevier Inc., 2009. MATLAB Basics. Â MATLAB is written to work with vectors and matrices; the name MATLAB is short for â€œMatrix Laboratoryâ€. A matrix looks like a table with rows and columns; an m by n (or m x n) matrix has m rows by n columns (these are the dimensions of the matrix). Vectors are a special case in which one of the dimensions is 1: a row vector is a single row, or in other words it is 1 by n (1 row by n columns), and a column vector is m by 1 (m rows by 1 column). Linear Algebra. Share. Facebook Twitter Google+ LinkedIn StumbleUpon. Informally, the terms matrix and array are often used interchangeably. More precisely, a matrix is a two-dimensional numeric array that represents a linear transformation. The mathematical operations defined on matrices are the subject of linear algebra. DÃ¼rerâ€™s magic square. A = 16 3 2 13.Â provides several examples that give a taste of MATLAB matrix operations. Youâ€™ve already seen the matrix transpose, Aâ€™. Adding a matrix to its transpose produces a symmetric matrix. A + A' ans = 32 8 11 17. Matlab is well suited to handle the so called linear programming problems. These are problems in which you have a quantity, depending linearly on several variables, that you want to maximize or minimize subject to several constraints that are expressed as linear inequalities...Â These are problems in which you have a quantity, depending linearly on several variables, that you want to maximize or minimize subject to several constraints that are expressed as linear inequalities with the same variables. Sometimes the number of variables and the number of constraints are high, or the. constraints in the linear inequalities or the expression for the quantity to be optimized may be numerically complicated. Applied Linear Algebra: AND Linear Algebra Labs with MATLAB. Peter J. Olver/Hill. ISBN: 1405832487. 3 study materials. Get started today for free. All Documents from Applied Linear Algebra: AND Linear Algebra Labs with MATLAB. chapter 8 - section 3 2011-07-16. COMPANY.