CONTENTS

Defining and Manipulating Matrices	1
Matrix Addition	2
Scalar Multiplication	2
Matrix Multiplication	2
Determinants, Inverses, and Transposes	3
Element-by-Element Operations	5
Built-in Functions	6
Defining and Graphing Functions	7
Superimposing and Labeling Graphs	7
Graphing With the Symbolic Toolbox	8
Matrix Eigenpair Computations	9
The Solution of Initial Value Problems	13
Symbolic Solutions Using dsolve	13
Homogeneous Linear Constant Coefficient Systems and the Exponential Matrix	14
Programming in MATLAB; Scripts and Functions	16
Solving Initial Value Problems Using Numerical Methods	17

Solving Initial Value Problems Using MATLAB's	22
Built-in Numerical Methods	
Flowfields for First Order Scalar Equations	24
Direction Fields for Two-Dimensional Autonomous	26
Systems	
Laplace Transforms	28
Two-Point Boundary Value Problems	29