

CONTENTS

	Preface	iii
Chapter 1	INTRODUCTION AND SUMMARY	1
Chapter 2	SOME OLD MATRIX ALGEBRA	7
Chapter 3	GENERALIZED INVERSES	17
Chapter 4	SOME NEWER MATRIX ALGEBRA	21
Chapter 5	NOTATION FOR DERIVATIVES	31
Chapter 6	SOME THEOREMS FOR $\partial Y/\partial X$	41
Chapter 7	EXAMPLES OF BASIC DERIVATIVES	49
Chapter 8	USING J AND K MATRICES	55
Chapter 9	EXPLOITING THE ATTITUDE OF POSITION	63
Chapter 10	DERIVATIVES WHEN X IS SYMMETRIC	79
Chapter 11	OPTIMIZATION OF SCALAR FUNCTIONS	87
Chapter 12	EXAMPLES OF OPTIMIZATION	93
Chapter 13	JACOBIANS	109
Chapter 14	DIFFERENTIALS	117
Chapter 15	THE OPERATION $(\partial/\partial X')Y$	137
Chapter 16	DIFFERENTIABLE GENERALIZED INVERSES	149
Chapter 17	MATRICES WITH LINEAR STRUCTURE	159
Chapter 18	MATRIX DERIVATIVES OF ELEMENTARY SYMMETRIC FUNCTIONS	169
Appendix	INFINITE DIMENSIONAL MATRICES	179
	REFERENCES	191
	SYMBOL INDEX	199
	AUTHOR INDEX	203
	SUBJECT INDEX	207