

CONTENTS

Preface		1
PART I	LARGE NUMBERS AND THEIR ARITHMETIC	
1.	Numbers in the World	5
2.	The Principal Uses of Numbers	6
3.	The World of Numbers	8
4.	Writing Numbers	10
5.	Powers and Exponents	19
6.	The Names of Really Large Numbers	22
7.	The Law of Exponents	26
8.	Scientific Notation	28
9.	How Large Is Large?	30
10.	Approximate Numbers and Orders of Magnitude	32
11.	Approximate Computation	34
12.	The Rough Art of Estimation	37
13.	Small Numbers	41
14.	Why Negative Exponents?	44
15.	The Large and the Small	46
16.	Division by Zero: The Road to Paradox	51
PART II	LARGE NUMBERS AT WORK	
17.	The Long Long Trail of π	55
18.	The Long Trail Continued: Computing Machines Meet Normal Numbers	66
19.	Back Over the Trail	75

20.	The Personality of Numbers	82
21.	Casting Out Nines; The Number Theory of Residues	94
22.	The Hardest of the Simple Problems	103
23.	Infinities Beyond Infinity: The Growth of Sequences	115
24.	Atomic Numbers, Astronomical Numbers, and Where Is Man?	125
Appendices		
I.	Some Selected Magnitudes in Science	130
II.	Weights, Measures, and Equivalentents	137
III.	Formulas for Measurement	143
Answers to Selected Problems		145
Bibliography		163