
CONTENTS

	Preface	ix
Chapter 1	INTERACTIVE COMPUTATION	1
1.1	In the Beginning	1
	Exercises	4
1.2	Memory and Precedence	5
	Exercises	8
1.3	Exponentiation	11
	Exercises	14
1.4	Compound Interest	17
	Exercises	20
1.5	Annuities	21
	Exercises	25
Chapter 2	Computer Programming	27
2.1	Line Numbers	27
	Exercises	30
2.2	Loops	32
	Exercises	35
2.3	Number Sequences	37
	Exercises	42
2.4	Flowcharts	44
	Exercises	50
2.5	Sorting	53
	Exercises	58

Chapter 3	PROBABILITY	64
3.1	Simulation	64
	Exercises	67
3.2	The Fundamental Counting Principle	69
	Exercises	72
3.3	Rearrangements	73
	Exercises	77
3.4	Binomial Coefficients	79
	Exercises	82
3.5	Ordered Selections	84
	Exercises	87
3.6	Pascal's Triangle	88
	Exercises	91
3.7	Expectation	94
	Exercises	97
3.8	The Probability of A or B	101
	Exercises	104
3.9	Conditional Probability	105
	Exercises	108
3.10	Binomial Probability	111
	Exercises	114
Chapter 4	STATISTICS	116
4.1	Data	116
	Exercises	119
4.2	A Choice of Averages	121
	Exercises	124
4.3	Square Roots	126
	Exercises	128
4.4	Standard Deviation	130
	Exercises	133
4.5	Normal Distributions	134
	Exercises	140
4.6	Chi-Squared	142
	Exercises	146
Chapter 5	NUMBER BASES	148
5.1	Numerals	148
	Exercises	152
5.2	Arithmetic	153

	Exercises	157
5.3	Strings	159
	Exercises	162
5.4	Logarithms	165
	Exercises	169
5.5	The Geometric Mean	171
	Exercises	174
5.6	The Mystery Number	176
	Exercises	179
Chapter 6	NUMBER THEORY	184
6.1	Prime Numbers	184
	Exercises	188
6.2	Digital Roots	190
	Exercises	193
6.3	Computational Complexity	195
	Exercises	200
6.4	Greatest Common Divisors	201
	Exercises	204
6.5	The Fundamental Theorem	205
	Exercises	209
6.6	Perfect Numbers	210
	Exercises	214
6.7	Rational Numbers	215
	Exercises	219
6.8	Irrational Numbers	220
	Exercises	223
Chapter 7	POLYNOMIALS AND FUNCTIONS	226
7.1	Functions	226
	Exercises	229
7.2	Polynomials	230
	Exercises	234
7.3	Rational Roots of Polynomials	235
	Exercises	238
7.4	Newton's Method	240
	Exercises	243
Chapter 8	GEOMETRY	246
8.1	The Pythagorean Theorem	246
	Exercises	249

8.2	Angles	251
	Exercises	256
8.3	Similar Triangles	258
	Exercises	262
8.4	Regular Polygons	265
	Exercises	269
8.5	Area	272
	Exercises	276
Index		280