CONTENTS

GETTING STARTED

Look at your calculator

2
2 3 3
3
4
5
5 7 8
8
9
10
12
13
14
17
17
18
18
19
20
21
22
23
25
26
27
28
29
31

Time yourself	32
Best method?	33
Challenge problems	33
GETTING RIGHT ANSWERS	35
Calculator errors	35
A visual check	36
What do you call a soft lead pencil	37
Twice over	38
Check your answers	39
Working backwards	40
Use your head	41
More techniques	44
Approximate mental arithmetic	45
Multiplication approximations	46
Division approximations	47 48
Addition and subtraction approximations	40 49
Rounding	49
FORMULAS	51
Procedures	51
Variables	53
Formulas	54
Pick's law	55
Sequences	57
Mystic rose	58 50
Sum a sequence	59 61
Arrangements	62
Oh say can you see?	63
Falling formulas	64
Distance, rate & time	65
Related formulas	66
Think metric!	67
Right triangle exercises	68
Right triangle exercises Right triangle areas	71
Irrational numbers	72
Using π	74
Volume formulas	76
Volume formulas	
PROCEDURES	81
What are they?	81
Writing procedures	82
It's not math	82
Procedure problems	84

Contents xi

Say it in English A grading procedure You try it Flowcharts Follow the flowcharts Practice with a table Newton's method Try Newton's method	85 86 87 88 90 94 95
CALCULATOR MEMORY Storage space Memory machines Simple memory Automatic constant Using automatic constants Mixed chain calculations Four key memory system Four key memory example Memory problems Two key memory system Fractions Use your memory The number e	99 99 100 101 103 104 108 109 110 111 113 114
CALCULATOR ARITHMETIC The number line Number line problems Calculator arithmetic Decimal equivalents Solving equations Weird examples	117 117 118 119 122 124
CALCULATOR VERSUS COMPUTERS Improving a calculator More function keys Scientific notation Using scientific notation Repetition Programmable calculators Using a programmable calculator It's less work Calculator program Computers Computer exercises Computer science Computer activities	129 129 130 131 132 135 135 136 137 138 139