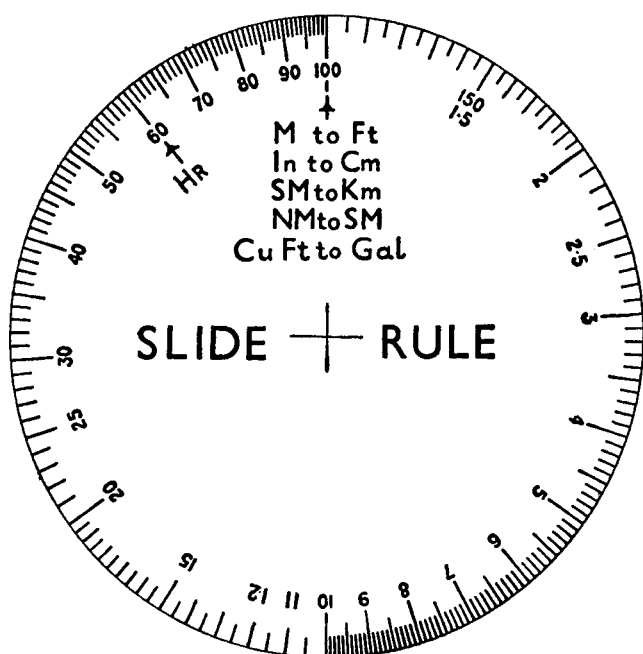


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MODERN MATHEMATICS

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CONTENTS

<i>Preface</i>	<i>page v</i>
Chapter 1. THE FOUR RULES	1
Revision of Addition, Subtraction, Multiplication and Division of Numbers and Quantities	1
2. FRACTIONS	8
Revision of Vulgar Fractions	8
Addition and Subtraction of Fractions	8
Multiplication and Division of Fractions	10
Fractions of Quantities	11
3. DECIMALS	22
Revision of Decimals	22
Significant Figures	23
Addition and Subtraction of Decimals	23
Multiplication and Division of Decimals	24
Conversion of Decimals to Vulgar Fractions and vice versa	25
4. AVERAGES	33
5. RATIO	37
6. PROPORTION	46
Direct Proportion	46
Inverse Proportion	49
7. PERCENTAGE	54

CONTENTS

<i>Chapter 8.</i>	GRAPHS	<i>page</i> 59
	Statistical Graphs	59
	Plotting of Points	59
	Continuous or Locus Graphs	61
	Conversion Scales	63
	Curved Graphs	64
9.	GEOMETRY	71
	Scales and Scale Drawing	71
	The Diagonal Scale	72
10.	MEASUREMENT OF AREAS AND VOLUMES	85
	Areas of Plane Surfaces	85
	Areas of Surfaces of Solids	89
	Volume	96
11.	LOGARITHMS	104
	Multiplication and Division by Logarithms	107
	Square and Square Root	113
12.	FORMULAE	119
	Evaluation and Transposition	119
13.	TRIGONOMETRY	129
	Properties of the Right-angled Triangle	129
	Complementary Angles	132
14.	THE SLIDE RULE	142
TABLES		148–153

PREFACE

In this book the authors assume that the student is likely to undertake more individual effort rather than to work under group control. The problems have been separated into different vocational or occupational types. In this way it is hoped to maintain interest and to encourage further progress in any particular sphere and to indicate the type of problem, found in industry or at work, which can easily be answered by elementary mathematics. There has not, in any instance, been an attempt to invent a problem to fit any particular fundamental rule; where a problem obviously suggests itself then it is included, otherwise it is omitted.

It is also assumed that ability to work correctly simple mechanical processes in fundamentals has been attained, so that mechanical exercises, as such, are reduced to a minimum, and there is no apology for the omission of such 'museum pieces' as 4 miles 3 furlongs 2 yards 2 feet 5 inches \times 29.

Knowledge of simple tables of weights and measures is also assumed, although, for the most part, the employment of these various units is confined to the sphere to which, by usage, they belong. For instance, cement is bought and used by the ton or cwt. or fractions of a cwt. Quarters, stones or pounds are not used when dealing with cement.

Those students, therefore, who propose to earn their living in industry or trade should find in the various types of example something which should appeal and consequently instruct by reason of its utility.

In this respect the sections on Logarithms and Formulae are particularly important. The principles involved have been

PREFACE

explained as clearly and simply as possible, and in the case of formulae brief descriptive text is introduced wherever these are used in order to stimulate interest and to illustrate a little of the wide application of the use of formulae in industrial and engineering work.

For simplicity of selection, the problems in the exercises are classified according to their application, thus:

- A denotes that the problem deals with agriculture, farming, butchering, etc.
- B denotes a problem in building, surveying or general constructional work.
- Tr denotes a problem in transport (road, rail, sea or air).
- T denotes a problem with technical application, including mechanical, electrical and structural engineering.
- G denotes a problem of general interest.

The Tables of Logarithms and Trigonometrical Ratios printed on pp. 148–153 are included by the kind permission of the Cambridge Local Examinations Syndicate.

S. A. W.
J. C. H.

May 1946