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ARTHUR L. SPARKES

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For the B.A. and B.Sc. Examinations of the University of London.

BY

ARTHUR L. SPARKES, B.A., F.C.S.,

AUTHOR OF 'ALGEBRAIC FACTORS SIMPLIFIED,' 'GUIDE TO THE MATHEMATICS OF THE MATRICULATION EXAMINATION,' ETC.;

HEAD MASTER OF THE MASONIC INSTITUTION FOR BOYS FOR IRELAND.

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INTRODUCTION

THE following pages are intended as a guide to the Mathematical Course for the London Examinations only. Information which is easily obtained in ordinary text-books is not given, but advice is offered as to the best book to refer to. Subjects which are not usually given, or points where the student would meet with difficulties, are more fully explained, as in the chapter on Mensuration.

The Second Part will contain all the subjects in Co-ordinate Geometry which are required for these examinations in full, with simple exercises from examination papers which have been already given.

DUBLIN, *Sept.* 1879.

GUIDE TO THE STUDY OF MATHEMATICS.

The 1st B.A. and 1st B.Sc. Examinations.

TWO papers are given in Mathematics at each of these examinations. The first paper embraces Arithmetic and Algebra, the second Geometry, Trigonometry, and Conics. The syllabus is divided into four sections:—(1) Arithmetic; (2) Algebra; (3) Geometry, including Conics; (4) Trigonometry.

I. ARITHMETIC.

It will be convenient for us to take the sections of the syllabus in the order given, beginning with *Arithmetic*.

The subjects included under this head are:—

The ordinary rules of arithmetic.
Vulgar and decimal fractions.
Rule of three and its applications.
Simple and compound interest.
Present value, discount, and annuities.
Extraction of square root.
Nature and use of logarithms.

(*a*) The Ordinary Rules of Arithmetic.

We recommend Barnard Smith's *Arithmetic* as the most useful; Colenso's is also a good one. Examples given in rules not mentioned in the sections following are seldom given; if ever they are, examples in practice, stocks, and factors of numbers are generally selected.

Care should be taken to get up the application of Practice. For example, suppose we want to know