

# **EXAMPLES IN ALGEBRA**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649579273

Examples in Algebra by C. O. Tuckey

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd.  
Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

[www.triestepublishing.com](http://www.triestepublishing.com)

**C. O. TUCKEY**

**EXAMPLES  
IN ALGEBRA**



CAMBRIDGE MATHEMATICAL SERIES.

---

EXAMPLES IN ALGEBRA.

EXAMPLES  
IN  
ALGEBRA

BY

C. O. TUCKEY, B.A.

ASSISTANT MASTER AT CHARTERHOUSE  
LATE SCHOLAR OF TRINITY COLLEGE, CAMBRIDGE



LONDON  
GEORGE BELL & SONS  
1903

~~77.9220~~

Educt 20129.03.851

June 20, 1903  
Harvard University,  
Dept. of Education Library,  
Gift of the Publishers.

TRANSFERRED TO  
HARVARD COLLEGE LIBRARY  
1932

NOTE.—*This volume can be had with or without answers.*

First published September, 1902.  
Reprinted November, 1903; 1908.

## PREFACE.

THESE examples are intended to provide a complete course of elementary algebra for classes in which the bookwork is supplied by the teacher.

In the choice of the subjects included, and in their arrangement, I have throughout followed the recommendations of the Committee on the Teaching of Mathematics appointed by the Mathematical Association.

Among new features may be mentioned:—

The postponement until after easy simultaneous equations of the 'long rules' for multiplication and division.

The postponement until after quadratics of complicated fractions, H.C.F., L.C.M., Square root, and Literal Equations.

The early introduction and extensive use of Graphs.

The inclusion of some of the applications to Geometry which form such a prominent feature in modern continental text-books.

The treatment of fractional indices from a numerical point of view, so as to lead up to the use of four-figure logarithm tables.

The stress laid on numerical checks of all kinds.

The large selection of problems, including very easy ones.



A number of examples have been taken from examination papers recently set at Charterhouse.

It remains for me to acknowledge that I am much indebted to my colleague, Mr. H. Crabtree, to whom are due the whole of the problems in Ex. 65, as well as those in Ex. 98; and also to the Rev. J. R. Colthurst and Mr. A. D. Tuckey, who have given me much kind assistance in checking the answers and in proof-reading.

C. O. TUCKEY.

## CONTENTS.

EXAMPLES	PAGES
1 Use of Signs, . . . . .	1, 2
2 Negative Quantities, . . . . .	3-5
3-5 Substitution, . . . . .	6-9
6-12 Manipulation, . . . . . (Addition, Subtraction, Multiplication, Division, Brackets.)	9-14
13, 14 Simple Equations, . . . . .	14-16
15, 16 Problems, . . . . .	16-20
17, 18 From Words to Symbols: Formulae, . . . . .	20-24
19 Miscellaneous, . . . . .	24-27
20-28 Operations with Single Terms, . . . . . (H.C.F., L.C.M., Fractions, Involution, Evolution.)	27-31
29, 30 Simultaneous Equations, . . . . . (Two Unknowns.)	31-33
31-33 Graphs, . . . . . (Of Functions, Solution of Equations, of Statistics.)	33-39
34 Simultaneous Equations, . . . . . (More than two Unknowns.)	39, 40
35 Problems, . . . . .	40-43
36 Multiplication, . . . . .	43, 44
37 Applications to Geometry, . . . . .	45
38, 39 Division, . . . . .	45-47
40 Miscellaneous, . . . . .	47-50
41, 42 Products by Inspection, . . . . . (Binomials, and other cases.)	50, 51
43-49 Factors, . . . . .	52-55
50-53 Applications of Factors, . . . . . (To Equations, H.C.F. and L.C.M., Fractions.)	56, 57

EXAMPLES	PAGES
54-56 Quadratic Equations, . . . . .	57-59
(And Factors of Quadratic: general case.)	
57 Simultaneous Quadratics, . . . . .	59, 60
58, 59 Problems: Applications to Geometry, . . . . .	60-62
60 Quadratic Graphs, . . . . .	62, 63
61 Miscellaneous, . . . . .	63-65
62 Symbolic Representation, . . . . .	65-70
63, 64 Applications to Arithmetic and Geometry, . . . . .	70-74
65 Miscellaneous Problems, . . . . .	74-85
66, 67 Surds, . . . . .	86-88
68-70 Fractional Indices, . . . . .	88-90
71-73 Logarithms, . . . . .	90-92
74-78 Integral Functions, . . . . .	92-96
(Degree, Symmetry, Indeterminate Co-efficients, $f(x)$ Notation, Remainder Theorem.)	
79 Miscellaneous, . . . . .	96-99
80 Variation, . . . . .	99-101
81 Equal Ratios, . . . . .	102
82 H.C.F., . . . . .	103
83 Fractions, . . . . .	104-106
84, 85 Literal and Fractional Equations, . . . . .	106, 107
86 Square Root, . . . . .	108, 109
87, 88 Arithmetic Progression, . . . . .	109-111
89, 90 Geometric Progression, . . . . .	112, 113
91, 92 Harmonic Progression, . . . . .	114-116
(And Miscellaneous Questions on the Progressions.)	
93-95 Permutations and Combinations, . . . . .	116-119
96, 97 Binomial Theorem, . . . . .	120-122
98 Miscellaneous Artifices, . . . . .	122-126
(In connection with Equations.)	
99 Miscellaneous Graphs, . . . . .	126-130
100 Miscellaneous Logarithms, . . . . .	131-133
101 General Miscellaneous Examples, . . . . .	133-148
ANSWERS, . . . . .	149-178