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Review

Author(s): F. S. M.

Review by: F. S. M.

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For through G' draw $G'B'$ parallel to GB .

Then $B'G' = BD = p$.

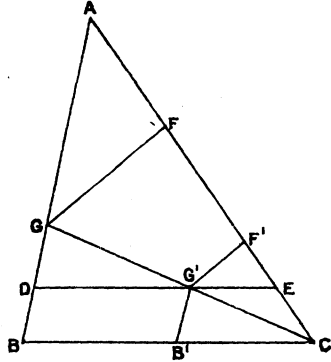
Now, since the quadrilaterals $CB'G'F'$, $CBGF$ are similar, and either similarly or oppositely situated, C being their centre of similitude; and since

$$B'G' : G'F' : F'C = p : q : r;$$

therefore $BG : GF : FC = p : q : r$.

We are also indebted to Dr. MACKAY for the following interesting historical note. It will show how fortuitously mathematical news is disseminated.

The problem was first proposed by Mr. Tucker in the *Educational Times* in 1864, and his solution of it, essentially the same as that given above, will be found in the *E. T. Reprint*, vol. ii., p. 16. Ten years later, it was proposed by Professor Neuberg in the *Nouvelle Correspondance Mathématique*, vol. i., p. 110, and solved by him in vol. ii., p. 248. Ten years later still, the particular case when p, q, r are all equal, was, at the instance of Mr. James



Edward, brought before the January meeting of the Edinburgh Mathematical Society by Professor Chrystal, who gave a solution which has not been published. A solution by Mr. Edward is given in the Society's *Proceedings*, vol. ii., pp. 5-6, and another by myself in the same volume at p. 27. In the *Educational Times* for February, 1884, this particular case is proposed for solution by Mr. Edward, and in April of the same year the mathematical editor repropose Mr. Tucker's problem, solutions of which appear in the number for October. In Vuibert's *Journal de Mathématiques Élémentaires* for 15th Nov., 1884, the particular case is proposed, and two solutions are given a month afterwards. In the *Proceedings* of the Edinburgh Mathematical Society, vol. iii., pp. 40-42, three solutions of the general problem, essentially the same, are given by myself, and a solution of the particular case by Mr. R. J. Dallas. Some years afterwards I found that the particular case went as far back as 1773-74. It occurs in the solution of a problem proposed in the *Ladies' Diary* for 1773 by Thomas Moss, which is reproduced above (p. 112). The solution will be given in the next number of the *Gazette*.

Solutions to all the Problems in No. 10, with the exception of 170-172 and 180, have been received. Many of these are in type, but there has not been room for their insertion in the present number. A solution of 178 is given in Prof. A. Lodge's paper (p. 100). Problem 179 was incorrectly worded, and has been restated in 196.

REVIEWS AND NOTICES.

The Elements of Algebra. By R. LACHLAN, Sc.D. (Edward Arnold.) The author tells us in the Preface that this forms the first part of a work on *Algebra*. We shall look forward with interest to the second part, for we have seen no better and more useful or reliable introduction to the subject. It would be distinctly to the advantage of school teaching if it became the standard text-book on elementary algebra. One of the most satisfactory features of the book is that nothing essential is omitted, and nothing unnecessary put in. Generally the best method of solving a question is given; not a useless variety. The book-work is very clear, concise, and complete. A considerable amount of deviation from the usual order is apparent; but nearly every change seems to us to result in improvement. We should however prefer to see some of the chapters divided into two or more, which could be effected with very little disturbance of the text. It might be well also

to place Simultaneous Quadratics after Division, on account of the difficulties which they present to beginners. F. S. M.

Solid Geometry. By PROFESSOR F. S. CAREY, M.A. (Sold by W. M. Murphy, Renshaw Street, Liverpool.) This is a small volume of 100 pages, in which the chief properties of the simpler solids are clearly explained and demonstrated. The elementary geometry of spherical triangles is dealt with very thoroughly; and we specially like the theorem in which the various cases of the identical equality of two spherical triangles are given in order in one long enunciation. F. S. M.

Mechanics of Fluids. By G. H. BRYAN, Sc.D., F.R.S., and F. ROSENBERG, M.A. (W. B. Clive.) This book is intended to prepare students for the Elementary Examination of the Science and Art Department on the Theoretical Mechanics of Fluids, and on the whole it is well adapted for the purpose. The first nine chapters form a condensed and somewhat indigestible introduction to Dynamics, and constitute the most unsatisfactory portion of the book. Surely it is well for even the elementary student to be taught that the principles of Dynamics rest upon the laws of motion, and are not to be proved by experiment. The rest of the book, dealing with the Mechanics of Fluids, is good. The principles of the subject, and experiments for their verification, are well explained, and clear descriptions are given of the usual instruments and apparatus.

The examples are numerous and well selected, and the ten examination papers on portions of the subject will serve to make the student pay some attention to the book-work. F. W. H.

BOOKS, MAGAZINES, ETC., RECEIVED.

Calculus for Engineers. By PROFESSOR J. PERRY, M.E., D.Sc., F.R.S. (Edward Arnold.)

First Stage Inorganic Chemistry. By G. H. BAILEY, D.Sc., and W. BRIGGS, M.A., F.R.A.S. (W. B. Clive.)

Professor J. J. Sylvester. A biographical article by Dr. G. B. HALSTED. ("Science.")

Fondamenti per una teoria generale dei gruppi. By PROF. R. BETTAZZI. (Tipografia Elzeviriana, Rome.) Also *Catena di un ente in un gruppo; Gruppi finiti ed infiniti di enti; Sulla definizione del gruppo finito.* ("Atti della R. Accademia delle Scienze di Torino," vols. xxxi., xxxii.)

Le superficie algebriche di genere lineare $p^{(1)}=2$, $p^{(1)}=3$. By PROF. FEDERIGO ENRIQUES. ("Rendiconti della R. Accademia dei Lincei," vol. vi.) Also *Sulle irrazionalità da cui può farsi dipendere la risoluzione d'una equazione algebrica $f(x, y, z)=0$ con funzioni razionali di due parametri.* ("Math. Annalen," vol. xlix.)

The American Mathematical Monthly. January to April, 1897. Edited by PROF. B. F. FINKEL and J. M. COLAW, A.M. (A Hermann, 8 Rue de la Sorbonne, Paris.)

Journal de Mathématiques Élémentaires. March to May, 1897. Edited by PROF. M. DE LONGCHAMPS. (Librairie Ch. Delagrave, 15 Rue Soufflot, Paris.)

Periodico di Matematica. March to May, 1897. Edited by PROF. GIULIO LAZZERI. (Tipografia di Raffaello Giusti, Livorno.)

Bolletino della Associazione Mathesis. No. 3.

Bulletin de la Société Physico-Mathématique de Kasan. Vol. vi., Nos. 3, 4; and vol. vii., No. 1.

The following *Mathematical Notes* have been received:

On the connection between the inscribed and escribed circles of a plane triangle. By H. B. BILLUPS, M.A.

On the simplification of certain algebraical expressions. By E. M. LANGLEY, M.A.

On obtaining the integral solution of the indeterminate equation $y^2 = ax + b$. By W. H. BESANT, Sc.D., F.R.S.