

NOTE ON A PROBLEM IN ELIMINATION.

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Two other solutions of problem in SCHOOL SCIENCE AND MATHEMATICS, March, 1915, p. 246.

$$\text{I. Given } \frac{\cos(a-3x)}{\cos^3 x} = \frac{\sin(a-3x)}{\sin^3 x} = b, \quad (1)$$

$$\text{We can easily get } \sin(a-2x) = \frac{1}{2}b \sin 2x, \quad (2)$$

$$\text{and } \cos(a-2x) = b \cos 2x. \quad (3)$$

$$\sin a = \frac{1}{2}b \sin 4x,$$

$$\cos a = \frac{1}{2}b(1+3 \cos 4x),$$

$$\sin^2 4x + \cos^2 4x = 1,$$

gives the desired result.

II. From (2) and (3), expanding and eliminating, $\sin 2x$ and $\cos 2x$ we get,

$$\left\{ \begin{array}{l} \sin a \\ \cos a - b \end{array} \right\} - \left\{ \begin{array}{l} -(\cos a + \frac{1}{2}b) \\ \sin a \end{array} \right\} = 0,$$

the result desired.

BOOKS RECEIVED.

Advance Theory of Electricity and Magnetism, by Wm. S. Franklin and Barry MacNutt, Lehigh University, Bethlehem, Pa. Pages vii+300. 15x22 cm. Cloth. 1915. \$2.00 net. Macmillan Co., New York.

Elementary Electricity and Magnetism, by Wm. S. Franklin and Barry MacNutt, Lehigh University, Bethlehem, Pa. Pages viii+174. 12.5x19.5 cm. Cloth. 1914. \$1.25 net. Macmillan Co., New York.

Vocational Mathematics, by Wm. H. Dooley, Technical High School, Fall River, Mass. Pages viii+341. 13x19 cm. Cloth. 1915. \$1.00. D. C. Heath & Co., Chicago.

Theory of Measurements, a Manual for Physics Students, by James S. Stevens, University of Maine. Pages vii+81. 13.5x19 cm. Cloth. 1915. \$1.25 net. D. Van Nostrand & Co., New York.

A Review of Algebra, by Romeyn H. Rivenberg, Peddie Institute, Heights town, N. J. 80 pages. 13x19 cm. Cloth. 1914. American Book Co., Chicago.

Essentials of Biology, Geo. W. Hunter, DeWitt Clinton High School, New York City. 448 pages. 15x21 cm. Cloth. American Book Co., Chicago.

Plane Geometry, by J. H. Williams and K. P. Williams. 264 pages. 12.5x19 cm. Cloth. 1915. Lyons and Carnahan, Chicago.

Lesson in Appreciation, by Frank H. Hayward, Inspector of Schools, London County Council, England. Pages xi+234. 13x19 cm. Cloth. 1915. 75 cents net. Macmillan Co., New York.

Die Elektrische Kraftübertragung, Von Paul Kohn, Ingenieur. Pages 121, with 137 illustrations. 12.5x18.5 cm. Cloth. 1914. B. G. Teubner, Leipsic and Berlin.

Das Perpetuum Mobile, Von Dr. Frida Tchak. 103 pages, with 38 illustrations. 12.5x18.5 cm. Cloth. 1914. B. G. Teubner, Leipsic and Berlin.

Laboratory Exercises in the Principles of Agriculture, by Irwin H. Opt and Russell R. Spafford, University of Nebraska. 192 pages. 21.5x24.5 cm. Paper. 1914. Wm. Welch Mfg. Co., Chicago.