207. "Graphs" Author(s): G. H. Bryan Source: *The Mathematical Gazette*, Vol. 3, No. 59 (Oct., 1906), p. 380 Published by: <u>Mathematical Association</u> Stable URL: <u>http://www.jstor.org/stable/3603723</u> Accessed: 30-10-2015 09:46 UTC

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the Pascal hexagon A'D'B'E'C'A' we see that this line is the tangent at A' to the conic S'; accordingly the polar of A'' with regard to S is the same line as the polar of A' with regard to S'. Taking the five points ABCDE



in turn, we have five pairs of points for which this condition is satisfied; hence from the above lemma we conclude that the conics S and S' must have the fixed triangle of the collineation as a self-conjugate triangle.

206. [D. 2. a.]. From Prof. Elliott's remark, I gather that he *presupposes* Dedekind's "Schnitt" theory. Of course, if this is done, and thus real numbers are defined (as 'Schnitte'), the sufficiency of the criterion of convergence can be proved, and this was done by Dedekind himself, at the end of his *Stetigkeit und irrationale Fahlen*, more shortly and, I think, more simply than in Prof. Elliott's note.

But I thought that Prof. Elliott was attempting to prove the sufficiency of the criterion *without* any previous arithmetical theory of irrationals (since he did not mention any), and I pointed out the impossibility of this.

PHILIP E. B. JOURDAIN.

207. [X. 4.]. "Graphs."—If in many examinations you set a question on tracing a simple conic, say,  $x^2 - y^2 + x + y - 1 = 0$ , you are ruled out because "General Equation of the Second Degree is not in the syllabus." The remedy is to replace the simple conic by a difficult *cubic* curve, the question then becomes a "graph" and is accepted without opposition. G. H. BRYAN.

208. [X. 4.]. Figure of a Bicycle.— The annexed figure or something like it was drawn by a candidate in an examination in Applied Mathematics in a question on Rigid Dynamics. The writer believes that that candidate passed. G. H. BRYAN.



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