THE NOVEMBER MEETING IN IOWA CITY

The five hundred eighth meeting of the American Mathematical Society was held in conjunction with a meeting of the Central Section of the Institute of Mathematical Statistics at the State University of Iowa on Friday, November 26, 1954. There were about 90 registrations, including 60 members of the Society.

Professor R. P. Boas presided at an address delivered by Professor Vaclav Hlavaty of Indiana University. The address was entitled *Unified field theory* and was given by invitation of the Committee to Select Hour Speakers for Western Sectional Meetings. There was a session for contributed papers in the afternoon presided over by Professor H. T. Muhly.

Abstracts of the papers presented follow. Those having the letter "t" after their numbers were read by title.

Algebra and Theory of Numbers

130. H. W. Becker: *A case history of the impotence of abstract algebra in Diophantine analysis.*

A Pythagorean tetrahedron has $t, u, v, y, x, z = (\alpha^2+\beta^2)(\gamma^2+\delta^2) \pm 4\alpha\beta\gamma\delta$, $2(\beta\gamma+\alpha\delta)(\alpha\gamma\pm\beta\delta)$, $(\alpha^2-\beta^2)(\gamma^2-\delta^2)$, $4[\alpha\beta\gamma\delta(\alpha^2+\beta^2)(\gamma^2+\delta^2)]^{1/2}$. In Dickson's *History* II, pp. 644–647, z is satisfied in large integers by $\alpha, \beta, \gamma, \delta = \boxed{S}$, or else by (1) $\alpha\beta(\alpha^2+\beta^2) = \gamma\delta(\gamma^2 \div \delta^2)$. The 2 known solutions of (1), Euler[168] (5) and Gerardin[181a], have duals on reversing alternate signs which satisfy (2) $abcd(a^2-b^2)(c^2-d^2) = \square = y^2/16$. In addition to these 2, "Je possede 3 formules de degres respectifs: 7, 13, 19."—M. Rignaux, L'Int. des Math. vol. 26 (1919) p. 5, which 3 do not seem to have come to light. In the Petrus transform of a, b, c, d (see Euler[253], p. 661 ibid.): $\alpha, \beta, \gamma, \delta = k, l, j, i = a^2-b^2, 2ab, c^2-d^2, 2cd$. The only known simple parametric solution for z is $\alpha, \beta, \gamma, \delta = (r^2-s^2)^2, 4rs(r^2+s^2), r, s$, Euler's[304] (ii) PT (ibid., p. 667–668), dual of Rolle's PT (ibid. p. 172, Fermat[62a]; p. 504, O'Riordan[33], last line). But the simplest solutions are mavericks (as yet unformulated) found by tabulating $\alpha\beta(\alpha^2+\beta^2)/\square$. Of the 10 known solutions in integers $\leqq 35$: 8, 1, 5, 1; 9, 8, 5, 2; 13, 9, 5, 1; 13, 9, 8, 1; 15, 8, 3, 1; 19, 17, 19, 9; 20, 9, 13, 4; 29, 2, 5, 2; 29, 2, 9, 8; 35, 12, 21, 20, only the last is not a maverick, an algebraic coverage or potency of only 10%. If $ab(a^2\mp b^2)/\square = \alpha\beta(\alpha^2 \pm\beta^2)/2\square$, then $\alpha, \beta, 2ab, a^2\mp b^2$ is a solution of z or y, by tabular algebra. Thus from 9, 4 and 5, 1 resp. (upper signs) one gets $\alpha, \beta, \gamma, \delta = 5, 1, 72, 65$. (Received October 13, 1954.)

131t. Ellen Correl and Melvin Henriksen: *A note on rings of bounded continuous functions with values in a division ring.*

Let $C^*(X, A)$ denote the ring of all bounded, continuous A-valued functions on a topological space X that is completely regular with respect to a topological division ring A (for definitions and background, see Goldhaber and Wolk, Duke Math. J. vol. 21 (1954) pp. 565–569). *Stone's theorem* is said to hold for A if $C^*(X, A)/M = A$ for every maximal ideal M of $C^*(X, A)$. *Theorem*: *Stone's theorem holds for locally compact*