ABSTRACTS OF PAPERS

SUBMITTED FOR PRESENTATION TO THE SOCIETY

The following papers have been submitted to the Secretary and the Associate Secretaries of the Society for presentation at meetings of the Society. They are numbered serially throughout this volume. Cross-references to them in the reports of the meetings will give the number of this volume, the number of this issue, and the serial number of the abstract.

266. Professor T. R. Hollcroft: *The web of algebraic surfaces with basis points.*

The web of algebraic surfaces with α basis points P_i is defined by the equation $\Sigma\lambda_k f_k=0$, $(k=1, 2, 3, 4)$, in which the f_k are surfaces, each with a multiple point of order r_i at each of the given points P_i, $(i=1, \cdots, \alpha)$, respectively. By means of the (1,1) correspondence existing between the planes of space and the surfaces of this web, an involution of order $n^3-\Sigma r_i^3$ is established. The characteristics of the branch-point and coincidence surfaces of this involution are obtained, and, from these, the complete system of characteristics of the web. (Received October 28, 1933.)

267. Mr. Elihu Lazarus: *Note to Kasner's paper on the solar gravitational field.**

If we choose a metric in a six-flat $ds^2=dx^2+dy^2+dz^2+dX^2+dY^2+dZ^2$, and use the transformation equations $x=r\sin\theta\cos\phi$, $y=r\sin\theta\sin\phi$, $z=r\cos\theta$, $X=(1-2m/r)^{1/2}\sin it$, $Y=(1-2m/r)^{1/2}\cos it$, $i=(-1)^{1/2}$, $Z=\int[1-256\, m^4/(R^2+16\, m^2)^3]^{1/2}\,dR$, $R=[8m(r-2m)]^{1/2}$, we get the Schwarzschild solution with an unessential change in sign. Z is in general hyperelliptic. But if we choose $m=1/4$ it becomes elliptic: $Z=\int[1-1/(R^2+1)^3]^{1/2}dR$. Substitute $R=(x^2-1)^{1/2}$, $Z=\int[(x^4+x^2+1)^{1/2}/x^2]dx$. If we factor the expression x^4+x^2+1 and make a new substitution, the integral becomes of the form $\int\{[(1-y^2)(1-k^2y^2)]^{1/2}/y^2\}dy$, $x^2=-(b/a)y^2$. This can be integrated by parts. The final answer is $Z=i(ab')^{1/2}\cdot[-(4r^2+2r+1)^{1/2}/(i(2ar/b)^{1/2})-(1+k^2)\,\mathrm{sn}^{-1}i(2ar/b)^{1/2}+2(-Z(\mathrm{sn}^{-1}i(2ar/b)^{1/2})+(\mathrm{sn}^{-1}i(2ar/b)^{1/2})Z'(0)]$. (Received September 26, 1933.)

268. Dr. Abraham Sinkov: *A property of cyclic substitutions of even degree.*

A solution is given in this paper to the following problem: Is it possible to set up two permutations of the same n symbols without having at least one pair of these symbols separated by the same interval in both permutations? The answer is yes if n is odd; no if n is even. The second of these results leads to the following two theorems in abstract group theory: (1) Given any two cy-

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