but have the advantage of being all distinct in a period, thus leading to a more incisive classification than is possible with the digits. (Received August 4, 1942.)

306. Gordon Pall: *The distribution of integers represented by binary quadratic forms.*

The formula due to R. D. James (American Journal of Mathematics, vol. 60 (1938), pp. 737–744) for the number of integers m prime to d represented by binary quadratic forms of discriminant d, is here freed of the restriction that m be prime to d. (Received August 3, 1942.)

307. Gordon Pall: *The weight of an n-ary genus of quadratic forms.*

The formula for the weight of a genus of integral positive quadratic forms in n variables is obtained in an explicit, useful form. The calculation of the factor for $p=2$ is greatly facilitated by the use of a much simplified system of invariants. There are numerous applications. (Received August 3, 1942.)

308. J. F. Ritt: *Bezout's theorem and algebraic differential equations.*

The intersection of the general solutions of two differential polynomials in two unknowns is examined with respect to the numbers of arbitrary constants on which its various irreducible components can depend. (Received August 6, 1942.)

309. Ernst Snapper: *The resultant of a linear set.*

The m-dimensional vector space $\overline{V}_m$ consists of vectors having, as components, m polynomials of the ring $P[y_1 \cdots y_n]$ where P is a field. The linear subsets of $\overline{V}_m$ are generated by the columns of $m \times s$ matrices with elements in $P[y_1 \cdots y_n]$. The ideal theory of $P[y_1 \cdots y_n]$, given by Hentzelt and Noether (Mathematische Annalen vol. 88 (1922), pp. 53–79), holds for these linear sets. By a linear, invertable transformation of the variables $y_1, \cdots, y_n$, which involves adjoining new variables γ_{ij} to P, the linear subsets of $\overline{V}_m$ become "transformed" linear sets of the vector space V_m over $P(\gamma)[x_1 \cdots x_n]$. Every transformed linear set L of V_m has a resultant $\rho \in P(\gamma)[x_1 \cdots x_n]$, which vanishes for, and only for, the zeros of the ideal $L/\overline{L}$. (See Snapper, Transactions of this Society, vol. 52 (1942), pp. 258–259 for the definitions of $\overline{L}$ and $L/\overline{L}$.) If $L_1 \subseteq L_2$, then $L_1 = L_2$, if and only if they have equal ranks and resultants. This gives a criterion for the existence of a polynomial solution of simultaneous linear equations with polynomials as coefficients. For $n=1$, the resultant becomes the highest dimensional determinantal factor of L. (Received September 29, 1942.)

ANALYSIS

310. M. A. Basoco: *On the Fourier developments of a certain class of theta quotients.*

This paper is concerned with the functions $\phi_\alpha^k(z) \equiv \{\vartheta_\alpha'(z, q)/\vartheta(_\alpha z, q)\}^k$ $(\alpha = 0, 1, 2, 3)$ where $\vartheta_\alpha(z, q)$ is a Jacobi theta function and k is a positive integer. The Fourier expansions of these functions are investigated and their arithmetical form is obtained for the cases $k=1, 2, 3$. Using these results and certain simple identities, there is obtained using the method of paraphrase (E. T. Bell, Transactions of this Society, vol. 22 (1921), pp. 1–30 and 198–219; *Algebraic Arithmetic*, American Mathematical Society Colloquium Publications, vol. 7, 1927, chap. 3), a series of theorems on numer-