

a curve C_λ , the general transformation of Čech, the curves of Darboux and Segre, and a class of generalized pangeodesics. (Received September 9, 1946.)

391. Walter Prenowitz: *Characterization of the lattice of convex sets of a descriptive geometry.*

L_1 , the lattice of convex sets of a descriptive (ordered linear) geometry, and L_2 , that of the linear spaces of a projective geometry, are characterized simultaneously. The geometries are of arbitrary dimension greater than 1. A new lattice concept *linear dependence of a point on a sequence of points* is introduced and used to define *closed element* as one which contains, with any sequence of points, all linearly dependent points. A generalization of modularity involving "closed element" is a common property of L_1 and L_2 . Garrett Birkhoff's characterization of L_2 in the finite-dimensional case is deducible from the results. The simultaneous treatment of L_1 and L_2 is based on axiomatizations of descriptive and projective geometry in terms of point and "order" which differ only in a single postulate. (Received September 28, 1946.)

392. Alice T. Schafer: *The neighborhood of an undulation point on a space curve.*

This paper employs the methods of projective differential geometry to study the neighborhood of an undulation point on an analytic space curve. By a suitable choice of the projective coordinate system, canonical power-series expansions representing the curve in the neighborhood of the undulation point are deduced. These expansions are then used to study properties of the curve in the neighborhood of the point, with particular emphasis placed on osculants of the curve, projections of the curve onto the faces of the tetrahedron of reference, and sections of the tangent developable of the curve made by faces of the tetrahedron of reference. (Received September 28, 1946.)

393. Oscar Zariski: *The concept of a simple point of an abstract algebraic variety.*

Let V and W be irreducible algebraic varieties over an arbitrary ground field κ , of dimension respectively r and ρ , $W \subseteq V$. If $\mathfrak{m}$ is the maximal ideal in the quotient ring $\mathfrak{o}$ of W then the ring $\mathfrak{m}/\mathfrak{m}^2$, regarded as a vector space over the field $\mathfrak{o}/\mathfrak{m}$, is of dimension not less than $r - \rho$. If the dimension is exactly $r - \rho$, W is said to be simple for V . In the first part of the paper this general concept of a simple W is studied by purely local methods. In the second part the global theory is developed. Here the main result is a general Jacobian criterion for simple loci, which reduces to the classical one whenever κ is either of characteristic zero or is a perfect field of characteristic $p \neq 0$. This general criterion implies that the singular manifold of V is always an algebraic proper subvariety of V . An absolutely simple W is defined by the condition that it remain simple under any extension of the ground field. Criteria for an absolutely simple W are: (1) the ordinary Jacobian criterion of the classical case; (2) V is locally, at W , analytically equivalent to a linear S_r . (Received August 22, 1946.)

LOGIC AND FOUNDATIONS

394. E. L. Post: *Recursive unsolvability of a problem of Thue.*

Thue's problem (Skrifter utgit av Videnskapselskapet i Kristiania 1914. I.