It is known that the asymptotic osculating quadrics at a point of a curve on a surface coincide if and only if the curve is tangent to a curve of Darboux and the surface satisfies the relation (1) $\beta\psi^3 = \gamma\phi^3$. This paper investigates the properties of surfaces which satisfy this relation indentically. In particular coincidence surfaces possess all of these properties. There exist, however, surfaces satisfying the relation (1) which are not coincidence surfaces. A necessary and sufficient condition that a surface which satisfies (1) be also a cubic surface is given and used to prove that there is, in the sense of projective equivalence, only one cubic coincidence surface. (Received March 11, 1943.)

LOGIC AND FOUNDATIONS

167. B. A. Bernstein: *Postulate sets for Boolean rings*.

The author gives nine sets of postulates for Boolean rings in terms of ring operations. Each set is independent, and remains independent when a unit-element postulate is added. (Received March 25, 1943.)

168. Max Zorn: *Informal note on the second underivability theorem*.

The content of this note may be condensed into one question: In which sense does a formula like (Ex) (Form (x) & $\overline{\text{Bew}}$ (x)), which from the formalist point of view has no independent meaning, "represent" the consistency of a formalism in the sense of Hilbert? The answer to this question is expected from those who insist that the underivability of such formulae constitutes evidence in support of the opinion that finitary consistency proofs of the type which so far have been employed by the Hilbert school probably cannot be found for the arithmetic formalism or *Principia Mathematica*. (Received March 27, 1943.)

STATISTICS AND PROBABILITY

169. Leon Alaoglu: *Harmonic analysis of stochastic processes*. Preliminary report.

If Ω is a differential stochastic process of elements $z(t)$ which are complex-valued functions of a real variable t, such that the distribution function of the variable $e^{i\theta}(z(t+h) - z(t))$ is independent of θ (θ real) and if the expectations $F(t) = \int_\Omega |z(t) - z(0)|^2 dP$, $m(t) = \int_\Omega (z(t) - z(0)) dP$ exist, the first being bounded and the second vanishing, then the Fourier transform of the function $z(t)$ exists for almost all z and defines a stationary stochastic process. (Received March 26, 1943.)

TOPOLOGY

170. B. H. Arnold: *On decompositions of T_1 spaces*.

Several authors (Banach, *Théorie des Opérations Linéaires*, p. 170; Eilenberg, Ann. of Math. vol. 43 (1942) pp. 568–579; Eidelheit, Studia Mathematica vol. 9 (1940) pp. 97–105) have proved theorems of the form: The "structure" of a certain class of transformations defined on a suitable space A to a fixed suitable space B determines the space A. In the present paper the author proves an analogous result which is valid for a very wide class of spaces A, but at the expense of allowing B to become variable. If two T_1 spaces, A, A' are such that the ordered system M of the upper semicontinuous decompositions of A is isomorphic to that of A', then A and A' are homeomorphic. Separation, connectedness, and compactness properties of the space