variation. Itô's definition is obtained as a limit of step function approximations which works when (i) f is $\mathfrak{B} \times \mathfrak{F}$ measurable; (ii) for each $t \in [a, b]$, $f(t) \in L^2(\Omega, P)$ and $\int_a^b E(|f(t)|^2)\, dt < \infty$; (iii) for each $t \in [a, b]$, $f(t, \cdot)$ is measurable $\mathfrak{F}(t)$, the σ-field generated by $\{B(s), s \leqslant t\}$. Note that condition (ii) restricts the average size of $|f(t)|$ and (iii) says that the dependence of $f(t, \omega)$ on ω is restricted to information about the past and present values of $B(s, \omega)$. This chapter does no more than give a taste of a large subject with important applications. An interested reader would go on to consult the book by McKean [**4**].

The reviewer enjoyed his commision to read the book. He suspects that the book will have limited value as a reference work because no topic is pushed very far. It does have a good selection of examples worked out in the text as well as problems at the end of each chapter, which are provided with outline solutions. This means that a competent graduate student or an analyst unfamiliar with stochastic processes would profit greatly by careful study of the book. It would make a good text for an advanced graduate course provided the lecturer was satisfied with the topics selected. The authors have provided a valuable new perspective on a variety of important analytic tools used for the study of stochastic processes.

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S. J. Taylor

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Homotopy theory; an introduction to algebraic topology, by Brayton Gray, Academic Press, New York, 1976, xiii + 368 pp., $22.00.

"This book is an exposition of elementary algebraic topology from the point of view of a homotopy theorist." It is with this sentence that the Preface to Brayton Gray's book begins, so perhaps we would be well advised to learn something of the homotopy theorist's point of view before examining the contents of the book itself.

In a vague sense homotopy theory studies properties of topological spaces that remain invariant under a continuous deformation. The achievements of the theory stem from the fact that so many seemingly rigid problems are really homotopy theoretic in nature.

Around the turn of the century, during the formative period of algebraic topology, Poincaré introduced [**9**] (among other things) the homology (groups) of a polyhedron. A polyhedron is a configuration of basic convex sets called simplexes, and it was from the combinatorial properties of the configuration that the homology of a polyhedron was defined. It then became essential to demonstrate that these combinatorially defined invariants were in