2. A. H. Lachlan, *On the number of countable models of a superstable theory*, Internat. Congr. for Logic, Meth. and Philos. of Sci., Bucharest, 1970.

3. J. Łos, *On the categoricity in power of elementary deductive systems*, Colloq. Math. **3** (1954), 58–62.

4. M. Morley, *Categoricity in power*, Trans. Amer. Math. Soc. **114** (1965), 514–538.

5. ______, *Countable models of $\aleph_1$-categorical theories*, Israel J. Math. **5** (1967), 65–72.

6. C. Ryll-Nardjewski, *On theories categorical in power* $< \aleph_0$, Bull. Acad. Polon. Sci. Cl. III **7** (1959), 545–548.

7. R. L. Vaught, *Denumerable models of complete theories* (Proc. Sympos. Foundations of Math., Infinitistic Methods, Warsaw), Pergamon Press, Krakow, 1961, pp. 303–321.

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Singular homology theory, by William S. Massey, Graduate Texts in Math., Springer-Verlag, 1980, xii + 265 pp., $24.80.

Mathematics students normally encounter a mixture of courses on topics in pure mathematics, such as number theory or modern algebra, and courses in which mathematical techniques are applied to solve problems in the physical and biological sciences and engineering. But often the first occasion offering a student an opportunity to apply techniques from one branch of mathematics to solve theoretical problems in another is an introductory course in algebraic topology. Even for the student whose primary interest lies in another field, the subtle strength of these methods can be a source of genuine excitement and fascination. One need only spend some time trying to prove Brouwer's Theorem directly, that a continuous map of the closed n-disk D^n to itself must have a fixed point, to appreciate the effectiveness of homology theory.

These refined tools are not easily assimilated. The essential machinery must be constructed with care, for although the ideas may have solid geometric motivation, the level of abstraction and complexity can lead to confusion and a lost sense of direction. One must scrupulously avoid the tendency to view the constructions as the objective rather than as the tools to be applied. This transition is best made gradually, with ample explanations and examples. The patience and perseverance required are amply rewarded since a foundation is established for developing more sophisticated methods with applications far beyond these initial steps. Additionally, analogous constructions and techniques have evolved in other branches of mathematics and have become part of the established repertoire.

Perhaps these are in part the reasons why an introductory course in algebraic topology appears in the mathematical curriculum at many institutions. This has not always been the case. As recently as twenty-five years ago such courses were quite rare. The discipline itself was already well established, benefiting from the research of some of the finest mathematicians of the time. But most of these scholars were originally trained in related fields