60[X].—L. ZIPPERER, *Tables for the Harmonic Analysis and Synthesis of Periodic Functions*, Physica Verlag, Wurzburg, Germany, 1961, 4 p. + 24 tables, 30 cm. Price 9.75 DM.

A periodic function $f(x)$ with period 2π may be represented by the series $y = \sum_{k=0}^{n} a_k \cos kx + \sum_{k=1}^{n} b_k \sin kx$. Divide the range into $2n$ equal parts and let y_s, $s = 1, 2, \cdots 2n$ be the functional values at these points. Then it is well known that the coefficients a_k and b_k can be simply expressed in terms of the functional values. For $n = 12$, formats are provided to facilitate the computation of the coefficients on a desk computer. Layover formats are also provided to evaluate y_s for a given set of a_k's and b_k's, and so evaluation of Fourier series is afforded. The text is in both German and English.

<div align="right">Y. L. L.</div>

61[Z].—JOHN E. COULSON, *Programmed Learning and Computer-Based Instruction*, John Wiley and Sons, Inc., New York and London, 1962, xv + 291 p., 23.5 cm. Price $6.75.

This book consists of the proceedings of a conference, held late in 1961, on applications of digital computers to automated instruction. As one of several books published in the past two years about the "teaching machine" business, it illustrates a fundamental characteristic about the current accelerated interest in programmed learning: many people and institutions have rushed into the field with very little useful corresponding output. The 1961 conference, cosponsored by the Office of Naval Research and the System Development Corporation, was a serious attempt to assess the place of digital computer in the context of programmed learning. Like most of the noncomputerized work on automated instruction, that reported here doesn't come off very well. Of the twenty-three papers presented, fewer than one-third report actual experience with computers as teaching machines. Of these, four deserve mention, and they should be read carefully by anyone with more than a passing interest in the subject. Here I refer to the chapters by Coulson (on the elegantly appointed experimental facility known as CLASS), Bitzer et al. (on PLATO II, the University of Illinois automated teaching facility), Licklider (on experiments using computer-generated displays in teaching German, and the graphical presentation of certain mathematical functions), and Uttal (on experience with three courses taught automatically, including one involving instruction in a psychomotor skill). Perhaps the shortcomings of the remainder of the book—tediousness, speculation, no quantitative evidence on effectiveness of the techniques—are representative of most meetings of this type, involving too many participants, too few people with anything of substance to offer, and too much enthusiasm for a promising but little understood area of human behavior. The meeting sponsors should, however, be commended for their recognition of the importance of this application of computer technology. The Second Conference, which I hope will not be held until some of the noise dies down and is replaced by competent experimental test of the unverified claims of the 1961 meeting, will be worth looking forward to.

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