Scandinavica, Mathematics and Computing Machinery Series, No. 8, Copenhagen, 1963, 73 p., 25 cm. Price Sw. Kr. 10.00.

Let $f(x)$ be given graphically on the closed interval $(0, 2\pi)$. Required are the Fourier coefficients; for example, a_n, where $f(x) = \sum_{n=0}^{N} a_n \cos nx$, and $a_n = (\frac{1}{2}n) \sum_{s=1}^{2n} f(x_s) \cos (s\pi/n)$. The idea is to have a set of rulers so graduated as to facilitate location of x_k.

There is a discussion of the relation between a_n and $A_n = (1/n\pi) \int_0^{2\pi} f(x) \cos nx \, dx$.

Y. L. L.

57[X].—G. E. UHLENBECK & G. W. FORD, "The theory of linear graphs with applications to the theory of the virial development of the properties of gases", Appendices 2, 3, 4, Le Boer & Uhlenbeck, editors, *Studies in Statistical Mechanics, Volume I*, North-Holland Publishing Company, Amsterdam, 1962, p. 199–211.

Three tables concerning graphs are given in the appendices of the monograph above.

For $p = 4(1)7$ and $k = 0(1)\frac{1}{2}p(p - 1)$, Appendix 2 lists the number of graphs with p points and k lines of the following six types: $N_{p,k}$ = labeled graphs; $C_{p,k}$ = labeled connected graphs; $S_{p,k}$ = labeled stars; $\pi_{p,k}$ = free graphs; $\gamma_{p,k}$ = free connected graphs; and $\sigma_{p,k}$ = free stars.

The interesting Appendix 3 shows diagrams of each topologically distinct connected graph for $p = 2(1)6$ and $k = p - 1 \ (1)\frac{1}{2}p(p - 1)$. For each of these there is given n, the number of such graphs if they were labeled; d, the so-called "complexity" (an invariant of the graph matrix); and finally a symbolic designation of the corresponding graph group. For p and k fixed the number of topologically distinct graphs is the quantity $\gamma_{p,k}$ above, while the sum of the corresponding values of n is the quantity $C_{p,k}$ above. (There is an error in the first graph for p, $k = 6, 7$; the leftmost vertical line should be deleted).

Appendix 4 lists $n(p, k, d)$ for $p = 2(1)7$, $k = p - 1 \ (1)\frac{1}{2}p(p - 1)$ and all pertinent values of d. This is obtained by adding the values of n for all graphs with the same values of p, k, and d.

Besides the physical application indicated in the title, the monograph contains a certain amount of graph theory, defining the above concepts and quantities and giving formulas. On page 197 is an unproved conjecture concerning the asymptotic behavior of $n(p, k, d)$.

D. S.

58[X].—J. G. HERRIOT, *Methods of Mathematical Analysis and Computation*, John Wiley & Sons, New York, 1963, xiii + 198 p., 24 cm. Price \$7.95.

This is the first volume in a series on spacecraft structures, and is intended to present the mathematical methods that are most useful to structural engineers. The emphasis is on numerical methods, and the contents run over a small gamut of topics from interpolation to partial differential equations. The exposition is simple, and, since the author avoids involvement with knotty questions, the