$+\sum_{s=1}^{m}(A_{2s}^{(k)}\delta_0^{2s}+B_{2s}^{(k)}\delta_1^{2s})]+R_{2m}$. This article tabulates: I. $A_{2s}^{(2)}$, $B_{2s}^{(2)}$, exact values for $2s=0, 2, \cdots, 20$ and sixteen decimal places for $2s=22, \cdots, 48$. II. $A_{2s}^{(k)}$, $B_{2s}^{(k)}$, $k=3(1)6$, $2s=2, 4, \cdots, 20$, eight significant figures (but exactly for $s=0$). Simple recursion formulas are obtained for $A_{2s}^{(2)}$ and $B_{2s}^{(2)}$ in terms of $M_{2s}\equiv 2A_{2s}^{(1)}$, an application of which is the expression of (1) in terms of δ_0^{2s} and $\delta_{1/2}^{2s+1}$, analogous to the forward version of the Newton-Gauss interpolation formula. Expressions are derived for $A_{2s}^{(2)}$ and $B_{2s}^{(2)}$ in terms of $B_\nu^{(n)}(x)$, Bernoulli polynomials of degree ν and order n. Cumulative recursion formulas are derived for $A_{2s}^{(k)}$ in terms of $B_{2s}^{(i)}$, and for $B_{2s}^{(k)}$ in terms of $A_{2s}^{(i)}$, $i=1, 2, \cdots, k$. (Received November 22, 1945.)

29. H. E. Salzer: *Table of coefficients for obtaining the first derivative without differences.*

When a function $f(x)$ is known for n equally spaced arguments at interval h, an approximation to the derivative at a point $x=x_0+ph$ may be obtained, by the differentiation of the well known Lagrangian interpolation formula, in the form $f'(x_0+ph)\sim(1/hC(n))\sum_{i=-[(n-1)/2]}^{i=[n/2]}C_i^{(n)}(p)f(x_0+ih)$, where $[m]$ denotes the largest integer in m, $C_i^{(n)}(p)$ are polynomials in p of the $(n-2)$th degree, and $C(n)$ denotes the least positive integer which enables $C_i^{(n)}(p)$ to have integral coefficients. The present table gives the exact values of these polynomials $C_i^{(n)}(p)$, for p ranging from $-[(n-1)/2]$ to $[n/2]$. For $n=4$, 5 and 6, the polynomials $C_i^{(n)}(p)$ are tabulated at intervals of 0.01; for $n=7$, they are tabulated at intervals of 0.1. (Received November 6, 1945.)

30. A. C. Sugar: *On the numerical treatment of forced oscillations.*

The solution of the equation $\ddot{x}+\omega^2x=a(t)$, $x(0)=0=\dot{x}(0)$, is given by $x=(1/\omega)\cdot\int_0^t a(\tau)\sin\omega(t-\tau)d\tau$. In this paper a simple approximation of $x$and hence of $\ddot{x}$ is found. Easy vector methods of obtaining max $|x|$ and max $|\ddot{x}|$ are discussed. (Received November 17, 1945.)

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31. L. M. Blumenthal: *Metric characterization of elliptic space.*

In this paper the first characterizations of finite and infinite dimensional elliptic spaces to be expressed wholly and explicitly in terms of distance relations are obtained. The characterizations are secured by direct, elementary geometric arguments. Only the simplest properties of elliptic space are used and no reference whatever is made to topological theorems. (Received October 3, 1945.)

32. S. C. Chang: *A new foundation of the projective differential theory of curves in five-dimensional space.*

As a preliminary a covariant triangle of reference and unit point for a plane curve is determined in an elementary and geometric manner using neighborhoods of order six. For a point P on a curve Γ in five dimensions a covariant triangle PP_1P_2 and unit point is first determined for the curve of intersection C of osculating plane and developable hypersurface of Γ. PP_1P_2 are three vertices of a quadrilateral Q on a covariant quadric generated by certain Bompiani osculants. The fourth vertex of Q is chosen as P_3. Similarly P_4, P_5 can be defined leading to a covariant pyramid for Γ. The Frenet-Serret formulas for the cases of P an ordinary and a k-ic ($k=6, 7, 8$) point follow from the corresponding canonical expansions. The method has the ad-