Thus for \( n = 6 \) we have

\[
\sigma_6(n) = \frac{42n^3 + 362n^2 + 1026n + 946}{211(n + 1)^5(n + 2)^3(n + 3)^2(n + 4)(n + 5)(n + 6)}.
\]

D. H. L.


QUERIES

13. TABLES OF INTEGRALS.—We are now interested in evaluating integrals of the following forms: \( \int_0^\infty e^{-t}dt/t^n \), \( \int_0^\infty e^{-t}dt/t^2n \). Are there published tables of these functions?

MELVIN MOONEY
U. S. Rubber Co.,
Research and Technical Development Dept.,
Passaic, N. J.

EDITORIAL NOTE: Among many tables of \( \int_0^\infty e^{-t}dt/t^n \) reference may be given to NYMTP, Tables of Sine, Cosine and Exponential Integrals, 2v., 1940, for \( x = [0(.0001)1.9999; 9D] \), \( [0(.001)10; 9S] \), \( [10(.1)15; 14DJ] \). There are useful Bibliographies in the volumes. When \( n \) is a positive integer \( \int_0^\infty e^{-t}dt/t^n \) may be made to depend upon \( Ei(-x) \). For the cases \( n = 2(-1) - 2 \) tables were published by W. L. Miller & T. R. Rosebrugh, R. So. Canada, Proc. and Trans., series 2, section 111, v. 9, 1903, p. 80–101, for \( x = [.1(.001)1(.01)2; 9DJ] \). There are also tables (p. 80–81) of \( -\int_0^\infty e^{-t}dt/t^n + 1/x + \ln x \), and \( -\int_0^\infty e^{-t}dt/t - \ln x \), for \( x = [0(.001).1; 9D] \). In the case of the second integral, when \( n = 0 \) we have the error function of which the most extensive table is that of A. A. Markov, Table des Valeurs de l'Intégrale \( \int_0^\infty e^{-t}dt \), St. Petersburg, 1888, for \( x = [0(.0013)(.01)4.8; 11D] \) with \( \Delta \); see MTAC, p. 136. However a more extensive table of the closely related function \( H(x) = \frac{2}{\sqrt{x}} \int_0^x e^{-t^2}dt \) has been published in NYMTP, Tables of Probability Functions, v. 1, 1941, \( x = [0(.0001)1(.001)5.6; 15D] \). This table can be used to evaluate the above integral by means of the relation \( \int_0^\infty e^{-t^2}dt = \frac{\sqrt{\pi}}{2} [1 - H(x)] \). Are there other tables of the first function than for \( -2 > n > 2 \), and of the second for \( n \neq 0 \)?

QUERIES—REPLIES

14. TABLES OF \( N^{3/2} \) (Q 5, p. 131; QR 8, p. 204; 11, p. 336; 13, p. 375).—We have ms. tables, to 10S, as follows for:

\[
N = 100(1)1000, 1000(10)10000, 1005(10)1565, \text{ and also } N = [1.0001(.0001)1.0099; 9D].
\]