1106-VK-338 **Thomas J. Osler** and **James Rosado*** (jarosado0911@gmail.com), 106 Emily's Lane, Mullica Hill, NJ 08062. *A table of definite integrals from the marriage of power and Fourier series.*

In this paper we show an unusual way to obtain values for definite integrals of the forms $\int_{-\pi}^{\pi} f(x)dx$, $\int_{-\pi}^{\pi} f(x)\cos(nx)dx$, and $\int_{-\pi}^{\pi} f(x)\sin(nx)dx$ where n is a positive integer. Our method is indirect in that we do not start with the integral. The integral is obtained as the end result of a process that did not visualize the integral at the start. We begin with an analytic function, and obtain our integrals by comparing the coefficients of related power series and Fourier series. A table of 36 definite integrals results. Eleven of these can be reproduced by Mathematica or found in familiar tables, while 25 others cannot. These may be new integral evaluations. (Received August 23, 2014)