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Let $f(x)$, $-\infty < x < \infty$, be a continuous unimodal probability density function, and let L, $U(L < U)$ satisfy the conditions: $\int_L^U f(x)\,dx = 1 - \alpha$ and $f(U) = f(L)$. Then $| L, U |$ is called the $(1 - \alpha)$-content modal interval for $f(x)$. In this paper $f(x)$ is taken to be the χ^2 density function with ϕ degrees of freedom. Applications are discussed, and a method of computation of modal intervals with given content is developed for this case. Tables are presented of L to 4D, U to 3D, $P_r(x^2 \leqq L)$ to 5D, and $(U - L)/(U + L)$ to 4D, for $\phi = 3(1)30(10)100$ and $1 - \alpha = .8, .9, .95, .99$. A previous table [1] gave values of $1 - \alpha$, effectively for $(U - L)/U + L) = .01, .05, .10, .20$, and $\phi = 4(4)80$.

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This paper gives details of the calculation of the probability density function $f_n(w)$, for which there are included tables to 4D corresponding to $w = 0(.05)7.65$ and $n = 3(1)20$, where n represents the size of the normal sample. Cadwell's formula [1] is cited as the basis for this calculation.

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In the words of its author, "This book, written primarily for the layman, will prove . . . of interest also to students, especially those in the upper forms of schools or in the first years in the university. It is a view of the part played by mathematics in applied science, as seen by a mathematical physicist."

Chapter 1, "The Mathematician and his Task," begins by discussing the meaning of theories in physics and the role of mathematics in the development of these theories. Chapter 2, "The Tools of the Trade," gives special attention to complex numbers and to the development of the calculus and the differential equations of mathematical physics. The approach is essentially that of the physicist ("an infinitesimal quantity [is] one which does not exceed the smallest change of which we can take cognizance in our calculations").

The remaining five chapters, entitled respectively, "Ballistics or Newtonian Dynamics in War," "An Essay on Waves," "The Mathematics of Flight," "Statistics or the Weighing of Evidence," and "Mathematics and the Weather," are essentially independent essays that not only provide illustrations of applied mathematics in