

changing the level of the book, but I do not want to go into the details of this. Instead I should like to make a remark that may be of general interest.

Copson's book is full of examples from physics but they are not presented in a very systematic way. Sometimes they just illustrate the algebraic classification into types, sometimes they motivate the classification. I believe that physics should have the lead and this for two reasons. A full physical introduction to, e.g., wave propagation gives the reader in one stroke many intuitive aspects that will appear later in the mathematical theory. Also, when the physicists turned to quantum mechanics, they left classical physics, heat, electricity, hydrodynamics and waves to the engineers, who, unfortunately, have to specialize in one of these branches. The mathematicians are the only ones who now have the opportunity of giving students something like a general education in classical physics. This opportunity should be used. Wave propagation, potential theory and heat conduction should appear as early as reasonably possible in every standard calculus course. The same goes for that indispensable tool, the Fourier transform. Neglecting these simple applications, calculus is not really a serious affair and—to use Webster's words—its lofty aim may get out of sight.

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*Elliptic functions*, by Serge Lang, Addison Wesley, Reading, Mass., 1973, xii + 326 pp., \$17.50.

Elliptic functions have attracted and fascinated many generations of mathematicians. For more than 150 years, these functions have kept their place in the center of mathematical interest and activity. Their appeal to us can perhaps be explained by their structural universality, what the author calls the intermingling of Analysis, Algebra and Arithmetic (the 3 Gaussian A's)—and thus a sizeable portion of Mathematics. In view of this, the theory of elliptic functions is considered to be a “deep” theory. Moreover, elliptic functions are the first nontrivial examples of the more general abelian functions. Not only do general theorems about abelian functions become explicit and more lucid in the case of elliptic functions, but also do special results about elliptic functions often constitute the first stepping stone on the way to their generalization in the abelian case.

Treatises on elliptic functions are numerous and it seems futile to attempt a classification. As to the book under review, its place in the existing literature is perhaps best described by saying that it continues the tradition of the classics by Weber and Fricke, including also more recent results which are connected with the names of Hasse, Deuring and Shimura. Specifically, a large part of the book is devoted to the body of results known under the name of “complex multiplication”. These results are concerned with the so-called singular values of elliptic modular functions, and it is shown that they serve to generate abelian extensions of imaginary quadratic number fields. In addition to complex multiplication, the author also considers the case of nonsingular values of modular functions and the fields they generate. This includes the