some less direct analogies, such as exist between the Weierstrass factorization theorem and the factorization of polynomials.

The second chapter discusses the uses of non-euclidean metrics in analysis. This seems a bit irrelevant.

The third chapter calls attention to the extensive use of noncommutative algebras in connection with Lie groups, differential operators, and so on.

The last chapter concerns the analytic theory of numbers. This subject is particularly relevant because of the constant interplay of results from number theory and analysis.

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Mécanique des Fluides. By Joseph Pérès. Paris, Gauthier-Villars, 1936. 8+322 pp.

It is not surprising that hydromechanics has for many years attracted the serious efforts of eminent mathematicians, such, for example, as Newton, Euler, Lagrange, Cauchy, Poincaré, Levi-Civita, to name only a few. For, both in the formulation of its fundamental concepts and in its methods, hydromechanics is essentially a part of mathematics. It postulates a "mathematical fluid" with certain properties, and in order to deduce further properties it calls on a wide range of mathematical doctrines, potential and function theory, differential equations, calculus of variations, and so on.

During the present century the researches of Oseen and Prandtl have done much to narrow the gap between theory and experiment. More recently the urgent needs of the science of flight have furnished a fertile soil which already supports a luxuriant theoretical growth.

The purpose and general character of the book under review may be seen from the following quotation from the preface by Henri Villat, who is generally regarded as the leading spirit in the study of hydromechanics in France. "The principal object of these lessons (at the Sorbonne) is the mathematical explanation of the resistance of fluids, and in particular the theory of the lifting wing." As indicated by this quotation the emphasis is on the force experienced by a body placed in a uniform stream. The following outline will describe the contents (the numbers refer to chapters).

A. Theoretical hydromechanics.
   1– 3 Mechanics of perfect fluids.
   4– 7 Two-dimensional motion (complex variables), flow past obstacles, profiles of Joukowski and others, formulas of Kutta and Blasius.
   9–10 Three-dimensional motion with vorticity.

B. The problem of resistance.
   8 Discontinuous motion, work of Villat and others.
   11 The Prandtl wing theory.
   12 The method of Oseen.

The reader unacquainted with the subject will find in Chapters 1–3 a clear introduction. Chapters 4–7 treat the topics covered in considerable detail. These three chapters, along with Chapter 9, will appeal to those interested in aerodynamics. The latter chapter is especially recommended for its neat presentation. Only in the last chapter is viscosity directly taken into account. But the reader who expects to find in the twenty-nine pages of this chapter an easy introduction to the Oseen theory is likely to be disappointed. The treatment is quite novel and at places difficult to follow for one not already acquainted with the theory.

The author's presentation is clear and direct and at times ingenious. He has achieved a number of refinements and simplifications which make the book worth