

# New

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## Mathematics and Physics

*Translated by J. Joel and N. Koblitz*

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Until recently, there has been a strong, mutually binding relationship between mathematics and physics. The beginning of the 20th century, however, saw each field develop its own language, tools, and models of reality- the physicists endeavoring to explore the relationship between thought and reality, the mathematician between thought and formula. A result of this dichotomy was the development of differing methods of problem solving. *Mathematics and Physics*, by a prominent Soviet mathematician, attempts to reunify the often disparate thought processes of these sciences. Beginning with a discussion of terms, the author explores the

subjective world of physical phenomena and its objective presentation in mathematics. The role of the observer, the observed, and even the unobservable is examined. Further, the physical and mathematical concepts of action, symmetry and spacetime are discussed on an abstract level where their common features can be appreciated.

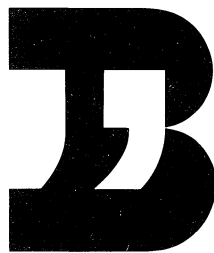
*Mathematics and Physics* will be useful and enjoyable reading for all mathematicians, theoretical physicists and students.

### **From the contents:**

A bird's eye view of mathematics – Physical quantities, dimensions and constants: the source of numbers in physics – A drop of milk: observer, observation, observable and unobservable – Space-time as a physical system – Action and symmetry

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