1046-Z1-46   **James R. Henderson*** (`henderso@pitt.edu`), 306 N. Franklin Street, Titusville, PA 16354.
What Is a Mathematical Theory?

It is currently fashionable among some philosophers to try to understand mathematics as an empirical science rather than as a purely formal undertaking. If one assumes this point of view, it is possible to learn much from earlier work done in the philosophy of science where physics, chemistry, biology, and other sciences traditionally taken to be empirical were under consideration. In particular, the question "What is a scientific theory?" has received much attention in this context. The logical positivists took theories to be partially interpreted axiomatic systems with both observational and theoretical terms; this is the syntactic view of theories due to Carnap and others. On the other end of the spectrum is the semantic view, due to van Fraassen and others, which takes theories to be identified with their associated sets of models. Not surprisingly, many positions between these two extremes have been staked out. This essay, relying in part on Bueno's extension of Quine's indeterminacy thesis rules out the syntactic view for mathematical theories and seeks to show that many of the arguments used against the semantic view lose their force in a mathematical setting. Thus, an interpretation between these extreme views is not needed. (Received July 03, 2008)