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Ratio in the Late Ancient Commentators

Ratio was one of the foundations of ancient Greek mathematics. Although a general ratio theory is developed in book five of the *Elements*, Greek mathematical practice was in fact much more diverse than this foundation would suggest. In particular, the theory of compound ratio seems never to have been fully established, despite the fact that the best mathematicians in all fields used compound ratios to produce new results. This lacuna was apparently conspicuous to the late ancient commentators. Both Theon and Eutocius offer meager attempts to give a theoretical foundation to the practices they found in the texts they were studying. Although these discussions are trivial from a mathematical perspective, they introduce interesting and important shifts in the underlying definitions. These late ancient views were then incorporated into the mainstreams of mathematical practice when they were taken over, and built upon, by the Arabic mathematicians.