



Franz Steiner Verlag

Theokritos Kouremenos
*The Unity of Mathematics
in Plato's Republic*

2015.
141 pages with 8 illustrations.
Hardcover.
€ 39,-
ISBN 978-3-515-11076-1
@ 978-3-515-11077-8



Jetzt auf unserer Homepage bestellen:
www.steiner-verlag.de

Theokritos Kouremenos

The Unity of Mathematics in Plato's Republic

Palingenesia – volume 102

In his *Republic* Plato considers grasping the unity of mathematics as the ultimate goal of the mathematical studies in which the future philosopher-rulers must engage before they turn to philosophy. How the unity of mathematics is supposed to be understood is not explained, however. This book argues that Plato conceives of the unity of mathematics in terms of the mutually benefiting links between its branches, just as he conceives of the unity of the state outlined in the *Republic* in terms of the common benefit for all citizens. Evidence for this view is provided by a discussion of his conception of astronomy as a propedeutic to philosophy, which can be best understood as hinting at a historically possible link between fourth-century-BC astronomy and solid geometry. The monograph also includes a detailed discussion of two well-known stories about Plato: not only he motivated Greek mathematicians to solve a difficult problem in solid geometry with his interpretation of a Delphic oracle given to the inhabitants of the island of Delos but he also posed the question which led to the development of the astronomical theory of homocentric spheres. It is argued that these stories are best understood as fictional episodes in Plato's life, constructed from passages in his works.

Contents

Preface → *Astronomy in the Republic*: Introduction | The two astronomies in *R.* 7 | The contemporary astronomy familiar to Glaucon | The hypotheses of contemporary astronomy | The criticism of contemporary astronomy | The future astronomy envisioned by Socrates | The future astronomy and solid geometry → *The Unity of Mathematics in the Republic*: Introduction | Arithmetic as unifier of mathematics | Proportion-theory as unifier of mathematics | Mutual benefit as unifier of mathematics | The unity of soul and Callipolis as mutual benefit of their parts | The unity of mathematics and the *Meno* | Two modern mathematicians on the unity of mathematics | Albert Lautman on the unity of mathematics | Mathematics and philosophy → *The Myth about Plato's role in the development of Mathematics*: Plato's role in the development of astronomy | The tradition of the Delian problem and its sources | The sources of the myth about Plato's impact on astronomy → Bibliography → Index of passages

Franz Steiner Verlag

