



1st ed. 2019, XV, 264 p. 27 illus., 2 illus. in color.

Printed book

Softcover

34,99 € | £29.99 | \$44.99

^[1]37,44 € (D) | 38,49 € (A) | CHF

41,50

eBook

26,99 € | £23.99 | \$34.99

^[2]26,99 € (D) | 26,99 € (A) | CHF

33,00

Available from your library or
[springer.com/shop](https://www.springer.com/shop)

MyCopy ^[3]

Printed eBook for just

€ | \$ 24.99

[springer.com/mycopy](https://www.springer.com/mycopy)

Sherif El-Helaly

The Mathematics of Voting and Apportionment

An Introduction

Series: Compact Textbooks in Mathematics

- Provides students with an accessible overview of the mathematical concepts central to voting systems
- Allows readers to engage with the material in a variety of ways, with chapters that can be approached in any order
- Includes a chapter on the mathematics of apportionment, a topic not always covered in adequate detail

This textbook contains a rigorous exposition of the mathematical foundations of two of the most important topics in politics and economics: voting and apportionment, at the level of upper undergraduate and beginning graduate students. It stands out among comparable books by providing, in one volume, an extensive and mathematically rigorous treatment of these two topics. The text's three chapters cover social choice, yes-no voting, and apportionment, respectively, and can be covered in any order, allowing teachers ample flexibility. Each chapter begins with an elementary introduction and several examples to motivate the concepts and to gradually lead to more advanced material. Landmark theorems are presented with detailed and streamlined proofs; those requiring more complex proofs, such as Arrow's theorems on dictatorship, Gibbard's theorem on oligarchy, and Gärdenfors' theorem on manipulation, are broken down into propositions and lemmas in order to make them easier to grasp. Simple and intuitive notations are emphasized over non-standard, overly complicated symbols. Additionally, each chapter ends with exercises that vary from computational to "prove or disprove" types. The Mathematics of Voting and Apportionment will be particularly well-suited for a course in the mathematics of voting and apportionment for upper-level undergraduate and beginning graduate students in economics, political science, or philosophy, or for an elective course for math majors. In addition, this book will be a suitable read for to any curious mathematician looking for an exposition to these unpublicized mathematical applications. No political science prerequisites are needed.

Order online at [springer.com](https://www.springer.com) / or for the Americas call (toll free) 1-800-SPRINGER / or email us at: customerservice@springernature.com. / For outside the Americas call +49 (0) 6221-345-4301 / or email us at: customerservice@springernature.com.

The first € price and the £ and \$ price are net prices, subject to local VAT. Prices indicated with [1] include VAT for books; the €(D) includes 7% for Germany, the €(A) includes 10% for Austria. Prices indicated with [2] include VAT for electronic products; 19% for Germany, 20% for Austria. All prices exclusive of carriage charges. Prices and other details are subject to change without notice. All errors and omissions excepted. [3] No discount for MyCopy.

