

1. Record Nr.	UNISA996466389203316
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Titolo	Fractions, ratios, and roots : rediscover the basics and learn about interesting applications // Renate Motzer
Pubbl/distr/stampa	Wiesbaden, Germany : , : Springer, , [2021] ©2021
ISBN	3-658-32574-7
Edizione	[1st ed. 2021.]
Descrizione fisica	1 online resource (viii, 59 pages) : illustrations, charts
Collana	Springer essentials, , 2731-3115
Disciplina	513.265
Soggetti	Decimal fractions Fraccions Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- What You Can Find in This essential -- Contents -- 1 Introduction -- 2 What Are (Common) Fractions? -- 3 Fractions as Parts of a Whole -- 3.1 The Whole as a Circle or Rectangle? -- 3.2 Addition and Subtraction of Fractions -- 3.3 Multiplication and Division -- 3.4 Sample Exercises for Skimming -- 4 Fractions as Ratios -- 4.1 The Ratio Aspect of Fractions -- 4.2 The Miraculous Multiplication of Areas -- 4.3 The Simpson Paradox -- 5 Ordering Fractions -- 6 Decimal Fractions -- 6.1 Finite Decimal Fractions -- 6.2 Infinite Decimal Numbers -- 7 Percentage Calculations -- 8 Irrational Numbers -- 8.1 Root Extraction -- 8.2 The Golden Ratio -- 9 Probabilities -- 9.1 Probability Approaches -- 9.2 Conditional Probability -- 9.3 Hypothesis Testing -- 10 Various Mean Values -- 11 Conclusion -- What You Learned From This essential -- Literature -- Internet source for drawn lotto numbers -- Further examples for the appearance of the golden ratio -- Soccer statistics can be read for example at.
Sommario/riassunto	Renate Motzer introduces the world of fractions and connects them with decimal numbers. She clearly shows that fractions can be understood as parts of a whole, but also as ratios of two quantities. The author clearly shows why roots cannot be exactly indicated by fractions, how to find good approximations and why an unusual

addition of fractions can lead to paradoxical results. Furthermore, she explains the use of fractions in percentage and probability calculations in a practical way and finally discusses different ways of forming mean values. This Springer essential is a translation of the original German 1st edition essentials, *Brüche, Verhältnisse und Wurzeln* by Renate Motzer, published by Springer Fachmedien Wiesbaden GmbH, part of Springer Nature in 2018. The translation was done with the help of artificial intelligence (machine translation by the service DeepL.com). A subsequent human revision was done primarily in terms of content, so that the book will read stylistically differently from a conventional translation. Springer Nature works continuously to further the development of tools for the production of books and on the related technologies to support the authors.

The contents

- What are (common) fractions?
- Fractures as ratios
- Irrational numbers
- Conditional probabilities

The target groups

- Lecturers and students of mathematics or students who want to repeat basic knowledge of fractions for their statistics lectures
- People interested in mathematics, who want to refresh and expand their knowledge from fractions to hypothesis testing from school

The Author

Dr. Renate Motzer is an academic senior councillor at the Chair for Didactics of Mathematics at the University of Augsburg. Her main focus is the didactic and professional training of future mathematics teachers at various types of schools.

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