
This Companion Encyclopedia aims to recover our mathematical heritage, examining the history and philosophy of the mathematical sciences in a cultural context, and tracing their evolution from ancient times up to the twentieth century. In 176 articles contributed by authors of eighteen nationalities, the work describes and analyses the variety of problems, theories, proofs and techniques, in all areas of pure and applied mathematics including probability and statistics. It demonstrates the importance of mathematics today, treating its historical interactions with the related disciplines of physics, astronomy, engineering, philosophy and the social sciences. It also covers the history of higher education in mathematics, and the growth of institutions and organizations connected with the development of the subject. The essays themselves are organized into twelve parts: 1 Ancient and non-Western traditions 2. The Western Middle Ages and the Renaissance 3. Calculus and mathematical analysis 4. Functions, series and methods in analysis 5. Logic, set theories, and the foundations of mathematics 6. Algebras and number theory 7. Geometries and topology 8. Mechanics and mechanical engineering 9. Physics and mathematical physics, and electrical engineering 10. Probability and statistics, and the social sciences 11. Higher education and institutions 12. Mathematics and culture. A thirteenth part consists of a general bibliography of the most important historical works; biographical notes on major mathematicians, and historians and philosophers of mathematics; a chronology of the main events in the development of mathematics; and an exhaustive index. (orig.)

Classification: A30