1. Record Nr. UNINA9910309662303321 Computations and Computing Devices in Mathematics Education Before Titolo the Advent of Electronic Calculators / / edited by Alexei Volkov, Viktor Freiman Cham:,: Springer International Publishing:,: Imprint: Springer,, Pubbl/distr/stampa **ISBN** 3-319-73396-6 Edizione [1st ed. 2018.] 1 online resource (464 pages) Descrizione fisica Mathematics Education in the Digital Era, , 2211-8144; ; 11 Collana 004.09 Disciplina Soggetti Mathematics - Study and teaching Computers - History Mathematics History **Mathematics Education** History of Computing History of Mathematical Sciences Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Introduction, by A. Volkov and V. Freiman -- Part 1. Middle East and Nota di contenuto Greece in Antiquity and Middle Ages -- Chapter 1. "Computation in Early Mesopotamia," by Duncan Melville -- Chapter 2. "Computations in Ancient Mesopotamian Mathematics: from Ur III to the Seleucid period", by Jens Hoyrup -- Chapter 3. "Computation Techniques in Ancient Greek Sources," by Fabio Acerbi -- Chapter 4. "Procedural aspects in Nicomachus' Arithmetic introduction and its transmission to Byzantine higher education," by Jean Christianidis and Athanasia Megremi -- Part 2: Oriental traditions -- Chapter 5. "Counting instruments and

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Sommario/riassunto

This volume traces back the history of interaction between the "computational" or "algorithmic" aspects of elementary mathematics and mathematics education throughout ages. More specifically, the examples of mathematical practices analyzed by the historians of mathematics and mathematics education who authored the chapters in the present collection show that the development (and, in some cases, decline) of counting devices and related computational practices needs to be considered within a particular context to which they arguably belonged, namely, the context of mathematics instruction; in their contributions the authors also explore the role that the instruments played in formation of didactical approaches in various mathematical traditions, stretching from Ancient Mesopotamia to the 20th century Europe and North America.