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Mathematics.[183] She studied the theories of rings, fields, and algebras. As in most areas of study, the explosion of knowledge in the scientific age led to specialization: by the end of the century there were hundreds of specialized areas in mathematics and the Mathematics Subject Classification was dozens of pages long.[194] More and more mathematical journals were published and, by the end of the century, the development of the World Wide Web led to online publishing. 21st century See also: List of unsolved problems in mathematics § Problems solved since 1995 In 2000, the Clay Mathematics Institute announced the seven Millennium Prize Problems, and in 2003 the Poincaré conjecture was solved by Grigori Perelman (who declined to accept an award, as he was critical of the mathematics establishment). Most mathematical journals now have online versions as well as print versions, and many online-only journals are launched. There is an increasing drive toward open access publishing, first popularized by arXiv. Future Main article: Future of mathematics There are many observable trends in mathematics, the most notable being that the subject is growing ever larger, computers are ever more important and powerful, the application of mathematics to bioinformatics is rapidly expanding, and the volume of data being produced by science and industry, facilitated by computers, is expanding exponentially.[citation needed] See also Mathematics Portal Archives of American Mathematics History of algebra History of calculus History of combinatorics History of the function concept History of geometry History of logic History of mathematicians History of mathematical notation History of measurement History of numbers History of number theory History of statistics History of trigonometry History of writing numbers Kenneth O. May Prize List of important publications in mathematics Lists of mathematicians List of mathematics history topics Timeline of mathematics Notes ^ The approximate values for n are 4 x 13(15)2 (3.0044...), 25/8 (3.125), 900/289 (3.11418685...), 1156/361 (3.202216...), and 339/108 (3.1389) ^ a b (Boyer 1991, "Euclid of Alexandria" p. 119) ^ J. Friberg, "Methods and traditions of Babylonian mathematics. Plimpton 322, Pythagorean triples, and the Babylonian triangle parameter equations", *Historia Mathematica*, 8, 1981, pp. 277–318. ^ Neugebauer, Otto (1969) [1957]. *The Exact Sciences in Antiquity*. Acta Historica Scientiarum Naturalium et Medicinalium, Vol. 9 (2 ed.). Dover Publications, pp. 1–191. ISBN 978-0-486-22332-2. PMID 14884919. Chap. IV. "Egyptian Mathematics and Astronomy", pp. 71–96. ^ Heath (1931), "A Manual of Greek Mathematics", *Nature*, 128 (3235): 5. Bibcode:1931Natur.128..739I. doi:10.1038/128739a0. S2CID 3994109. ^ Sir Thomas L. Heath, *A Manual of Greek Mathematics*, Dover, 1963, p. 1: "In the case of mathematics, it is the Greek contribution which it is most essential to know, for it was the Greeks who first made mathematics a science." ^ George Gheverghese Joseph, *The Crest of the Peacock: Non-European Roots of Mathematics*, Penguin Books, London, 1991, pp. 140–48 ^ Georges Ifrah, *Universalggeschichte der Zahlen*, Campus, Frankfurt/New York, 1986, pp. 428–37 ^ Robert Kaplan, "The Nothing That Is: A Natural History of Zero", Allen Lane/The Penguin Press, London, 1999 ^ "The ingenious method of expressing every possible number using a set of ten symbols (each symbol having a place value and an absolute value) emerged in India. The idea seems so simple nowadays that its significance and profound importance is no longer appreciated. Its simplicity lies in the way it facilitated calculation and placed arithmetic foremost amongst useful inventions. the importance of this invention is more readily appreciated when one considers that it was beyond the two greatest men of Antiquity, Archimedes and Apollonius." ^ Pierre Simon Laplace ^ A.P. Juschkewitsch, "Geschichte der Mathematik im Mittelalter", Teubner, Leipzig, 1964 ^ a b (Boyer 1991, "Origins" p. 3) ^ Williams, Scott W. (2005). "The Oldest Mathematical Object is in Swaziland". *Mathematicians of the African Diaspora*. SUNY Buffalo mathematics department. Retrieved 2006-05-06. ^ Marshack, Alexander (1991). *The Roots of Civilization*, Colonial Hill, Mount Kisco, NY. ^ Rudman, Peter Strom (2007). *How Mathematics Happened: The First 50,000 Years*. Prometheus Books, p. 64. ISBN 978-1-59102-477-4. ^ Marshack, A. 1972. *The Roots of Civilization: the Cognitive Beginning of Man's First Art, Symbol and Notation*. 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