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♦ Inmost Truth ♦

Foundational

Closed Books:

Israel M. Gelfand, Alexander Shen (1993), Algebra; Birkhäuser.

Reliability:

- Israel M. Gelfand: (04-Feb-2022) According to the MacTutor History of Mathematics Archive and the Mathematics Genealogy Project, Dr Gelfand was a prominent Soviet mathematician; awarded Order of Lenin (three times), ForMemRS (1977), Wolf Prize (1978), Wigner Medal (1980), Kyoto Prize in Mathematical Sciences (1989), AMS Steele Prize (2005); doctoral advisor was the preeminent Andrey Kolmogorov:

Usability:

- (04-Feb-2022) Scored 4.6 from 50 ratings on Amazon.
- (04-Feb-2022) Scored 4.48 from 109 ratings on GoodReads.

Serge Lang (1971), Basic Mathematics; Springer.

Reliability:

- Serge Lang: (04-Feb-2022) According to the MacTutor History of Mathematics Archive and the Mathematics Genealogy Project, Dr. Lang's education was California Institute of Technology (B.A.), Princeton University (Ph.D.); awarded Leroy P. Steele Prize (1999) and Cole Prize (1960):

> Lang graduated from the California Institute of Technology in 1946 with a B.A. in physics. He then served for around eighteen months in the U.S. Army and he was stationed for part of this time in Italy and Germany. After returning to the United States, Lang went to Princeton University with the intention of studying for a doctorate in philosophy. After a year in the philosophy department, he changed to mathematics and Emil Artin became his thesis advisor. He was awarded his Ph.D. in 1951 for his dissertation *On Quasi Algebraic Closure*. His early publications were in the area of his thesis, for example in 1952 he published three papers: *On quasi algebraic*

Usability:

- (04-Feb-2022) Scored 4.4 from 60 ratings on Amazon.
- (04-Feb-2022) Scored 4.3 from 97 ratings on GoodReads.

Open Books:

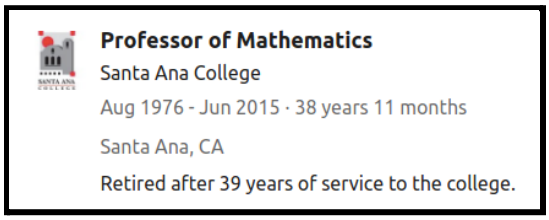
OpenStax (2020), Prealgebra.

Note:

- OpenStax (wiki) is a well-known non-profit educational initiative producing peer-reviewed, openly licensed textbooks. At least one 'contributing author' should be found for each book with their credentials analysed.

Reliability:

- Andrea Honeycutt Mathis: (04-Feb-2022) She was a mathematics professor at Santa Ana College for ~39 years, until her retirement in June, 2015:



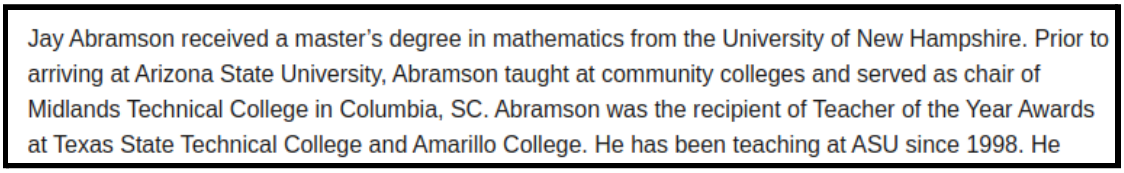
OpenStax (2021), Algebra and Trigonometry (2nd ed.).

Note:

- OpenStax (wiki) is a well-known non-profit educational initiative producing peer-reviewed, openly licensed textbooks. At least one 'contributing author' should be found for each book with their credentials analysed.

Reliability:

- Jay Abramson: (04-Feb-2022) Received a master's degree in mathematics from the University of New Hampshire. Prior to arriving at Arizona State University, Abramson taught at community colleges and served as chair of Midlands Technical College in Columbia, SC. Abramson was the recipient of Teacher of the Year Awards at Texas State Technical College and Amarillo College. He has been teaching at ASU since 1998:



Web Resources:

Mathigon

Utility:

- A gorgeous interactive and personalised mathematics textbook. As of (04-Feb-2022), it is quite incomplete, so cannot serve as a full course, but it has rightfully been highly recognised and rewarded:

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SorobanExam

Utility:

- By thought alone, new knowledge of numbers can be known. For example, the Fibonacci numbers mod 10 form a periodic sequence with a period of 60. That can be found out just by thinking about it. So, there is a kind of purity and precision to arithmetic and commanding numbers that is appropriate to developing Inmost Truth. Hence, the inclusion of this resource.

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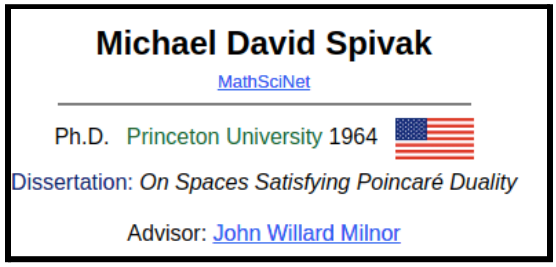
Intermediary

Closed Books:

Michael Spivak (2008), Calculus (4th ed.); Cambridge University Press.

Reliability:

- Michael Spivak: (04-Feb-2022) According to the Mathematics Genealogy Project, Dr. Spivak's earned a PhD from Princeton University:



Usability:

- (04-Feb-2022) The 4th edition scored 4.7 from 123 ratings on Amazon.
- (04-Feb-2022) The 4th edition scored 4.51 from 851 ratings on GoodReads.

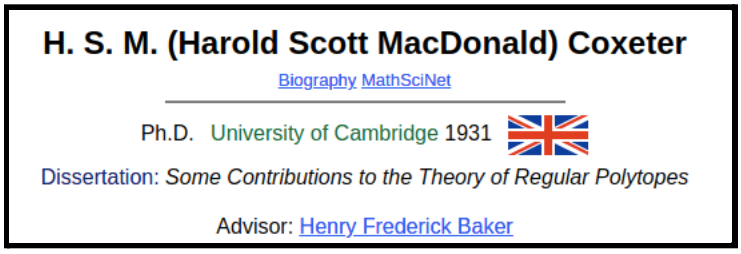
H. S. M. Coxeter, Samuel L. Greitzer (1967), Geometry Revisited; American Mathematical Society.

Note:

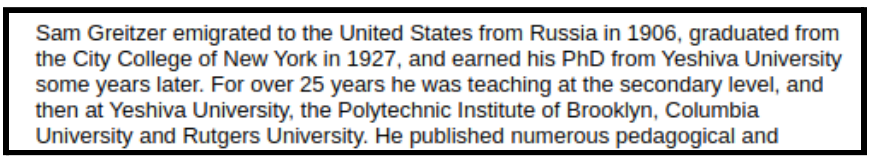
- It was very tempting to include Oliver Byrne's beautiful rendition of Euclid's Elements here. But, ultimately it was decided against in favour of a modern treatment of geometry, which includes the trigonometric functions and so forth.

Reliability:

- H. S. M. Coxeter: (04-Feb-2022) According to the MacTutor History of Mathematics Archive and the Mathematics Genealogy Project, Dr. Coxeter's earned a PhD from the University of Cambridge and was a highly influential geometer:



- Samuel L. Greitzer: (04-Feb-2022) According to one obituary, Dr. Greitzer earned a PhD from Yeshiva University and taught secondary school Mathematics for over 25 years:



- The book has an esteemed reputation and has been in print for over 40 years.

Usability:

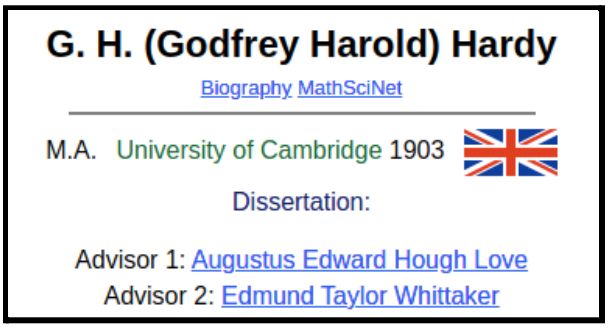
- (04-Feb-2022) Scored 4.8 from 39 ratings on Amazon.
- (04-Feb-2022) Scored 4.58 from 88 ratings on GoodReads.

Open Book:

G. H. Hardy (1908), A Course in Pure Mathematics; Dover Publications.

Reliability:

- G. H. Hardy: (04-Feb-2022) According to the MacTutor History of Mathematics Archive and the Mathematics Genealogy Project, Hardy received an M. A. (the highest degree in England at the time) from the University of Cambridge. He was a highly influential mathematician, but most important to this context, he reintroduced rigour to highschool mathematics:



Usability:

- (04-Feb-2022) Scored 4.5 from 33 ratings on Amazon.
- (04-Feb-2022) Scored 4.18 from 168 ratings on GoodReads.

Web Resources:

Paul's Online Notes

Reliability:

- Paul Dawkins: (18-Feb-2022) According to , Dr. Dawkins earned his PhD from the University of Texas at Arlington in 2009.

Utility:

- Particularly useful to students in the US given the structure. The notes can be freely downloaded for external use, as well.

SageMath

Utility:

- A free open source alternative to Magma, Maple, Mathematica, and MATLAB.
- The syntax resembles Python, which is fortunate as according to Statistics Times, Python is the most popular programming language, as of (18-Dec-2021).

Geogebra

Utility:

- A superb and free interactive geometry, algebra, statistics, and calculus application.

- Many portions are open-source and multi-lingual.

AoPS Community

Note:

- Like all online communities, caution must be taken.

Utility:

- A large community for people to discuss middle school to college Mathematics. As of (18-Feb-2022) it is highly active.

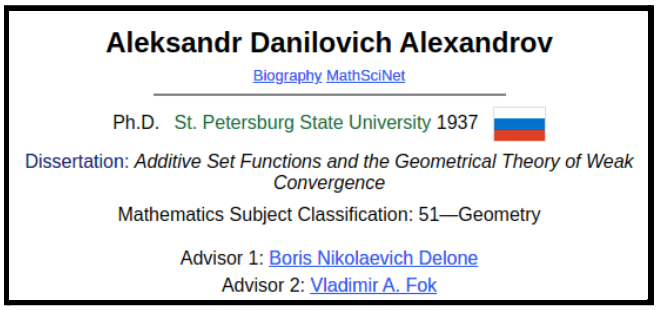
Advanced

Closed Books:

A. D. Aleksandrov, A. N. Kolmogorov, M. A. Lavrent'ev (1999), Mathematics: Its Content, Methods and Meaning; Dover Publications.

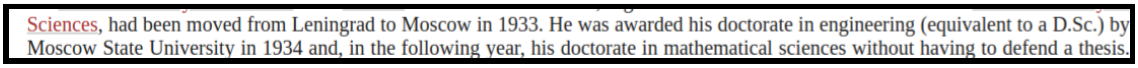
Reliability:

- A. D. Aleksandrov: (04-Feb-2022) According to the MacTutor History of Mathematics Archive and the Mathematics Genealogy Project, Dr. Aleksandrov earned a PhD from St. Petersburg State University in 1937:



- A. N. Kolmogorov: (04-Feb-2022) According to the MacTutor History of Mathematics Archive and the Mathematics Genealogy Project, Dr. Kolmogorov earned a PhD from Lomonosov Moscow State University in 1925, and was a highly influential mathematician of the 20th century:

- M. A. Lavrent'ev: (04-Feb-2022) According to the MacTutor History of Mathematics Archive, Dr. Lavrent'ev earned a PhD in engineering (equivalent to a D.Sc.) by Moscow State University in 1934 and, in the following year, his doctorate in mathematical sciences without having to defend a thesis:


Sciences, had been moved from Leningrad to Moscow in 1933. He was awarded his doctorate in engineering (equivalent to a D.Sc.) by Moscow State University in 1934 and, in the following year, his doctorate in mathematical sciences without having to defend a thesis.

Usability:

- (04-Feb-2022) Scored 4.7 from 155 ratings on Amazon.
- (04-Feb-2022) Scored 4.4 from 212 ratings on GoodReads.

I. N. Bronshtein, K. A. Semendyayev, Gerhard Musiol, Heiner Mühlig (2007), Handbook of Mathematics (5th ed.); Springer.

Reliability:

- This resource is somewhat unique in its history, as it started off as a resource in the Russian language for engineers from the late I. N. Bronshtein and K. A. Semendyayev. The accreditation or staff pages for the listed authors don't appear online, but those for some of the chapter contributing authors do. It is published by

Springer, a highly regarded publishing house in mathematics (consider the UTM and GTM series). It is also in its 5th edition. Finally, it has been personally checked in multiple chapters and it is accurate in them.

Usability:

- (04-Feb-2022) Scored 4.2 from 18 ratings on Amazon.
- (04-Feb-2022) The 5th edition scored 4.57 from 42 ratings on GoodReads.

Open Book:

Evan Chen (Ongoing), An Infinitely Large Napkin.

Reliability:

- Evan Chen: According to his graduate page, Evan Chen is an MIT graduate student in mathematics and an olympiad coach.

Web Resources:

MIT OpenCourseware

Reliability:

- Massachusetts Institute of Technology (MIT) ranked 1st in Mathematics in the 2021 QS World University Rankings.

Oxford Notes

Reliability:

- The University of Oxford Mathematical Institute ranked 5th in Mathematics in the 2021 QS World University Rankings.

OverLeaf

Utility:

- A collaborative cloud-based LaTeX editor. It is free to use and due to the ubiquity of LaTeX in mathematical publications, it is very useful for writing papers.

MathOverflow

Utility:

- An advanced question-and-answer website for trained mathematicians. As of (18-Feb-2022) it is highly active and seems to be focussed on the technical nature of mathematics, so it would be a productive place to serve the community.