Math 351

Valuable References



Consequences of 1 = -1:

*½ = -½ (dividing each side by 2)*

*2 = 1 (add 3/2 to each side)*

*Since I and the Pope are clearly 2 people then the Pope and I are one person (since 2 = 1).*

*Then I am the Pope, since we are the same person.*

**Videos**

[Who’s on first?](https://www.youtube.com/watch?v=kTcRRaXV-fg)

[7 × 13 = 28](https://www.youtube.com/watch?v=lzxVyO6cpos)

[Banach-Tarski paradox, and more](https://www.youtube.com/watch?v=s86-Z-CbaHA)

[10 “mind-twisting” paradoxes](https://www.youtube.com/watch?v=3x1q5_lYMRA)

[Yesterday’s coffee today](https://www.youtube.com/watch?v=JgMiS81jFyE)

[What is Russell’s paradox?](http://www.scientificamerican.com/article/what-is-russells-paradox/)

[MIT OpenCourseWare](http://ocw.mit.edu/courses/mathematics/18-100a-analysis-i-fall-2007/) for Mattuck’s 18.100A (2007)

[Real Analysis lectures](http://www.youtube.com/watch?v=sqEyWLGvvdw), Harvey Mudd College (2010)

[Top 10 Proof Techniques Not Allowed](https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-042j-mathematics-for-computer-science-fall-2010/video-lectures/lecture-3-strong-induction/MIT6_042JF10_proof.pdf), MIT

[How to Write *Good* Proofs](https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-042j-mathematics-for-computer-science-spring-2015/proofs/tp1-1/) 6.042J, MIT OpenCourseWare

Raymond M. Smullyan, [What is the name of this book?](https://archive.org/details/WhatIsTheNameOfThisBook), Dover (1978)

[∞ just -1/12?](https://plus.maths.org/content/infinity-or-just-112) By [David Berman and Marianne Freiberger](https://plus.maths.org/content/list-by-author/David%20Berman%20and%20Marianne%20Freiberger)

**Films**

[The Man Who Knew Infinity](https://en.wikipedia.org/wiki/The_Man_Who_Knew_Infinity_%28film%29)

**Textbooks**

1. S. Abbott, **Understanding Analysis**, 2nd edition, Springer (2015)
2. T. Apostol, **Calculus**, volume I,
3. Bernard Gelbaum and John Olmsted, **Counterexamples in Analysis** (paperback), Dover Publications (2003)
4. W. Gilbert & S. Vanstone, **An Introduction to Mathematical Thinking: Algebra and Number Systems**, Pearson Prentice-Hall (2005)
5. P. Halmos, Naïve Set Theory, Dover Publications (1960)
6. R. Hammack, **Book of Proof**, Revised edition, Hammack (2013)
7. G. H. Hardy, **A Course of Pure Mathematics**, centenary edition, Cambridge Mathematical Library (2008)
8. G. H. Hardy, **Divergent Series**, AMS Chelsea Publishing, 2nd ed. (2000)
9. J. Marsden & M. Hoffman, Elementary Classical Analysis, 2nd edition, W. H. Freeman (1993)

#  George Polya, Mathematics and Plausible Reasoning, Volume 1: Induction and Analogy in Mathematics [paperback], Princeton University Press (1990)

1. George Polya, **Mathematics and Plausible Reasoning, Volume II: Patterns of Plausible Inference** [paperback], Princeton University Press (1990)
2. W. Rudin, **Principles of** **Real Analysis**, 3rd edition, McGraw-Hill (1976)
3. J. Michael Steele, **The Cauchy-Schwarz Master Class: An Introduction to the Art of Mathematical Inequalities** (MAA Problem Books Series), Cambridge University Press (2004)

