Maths for Economists

A Comprehensive Handbook

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Preface

This book is written as a handbook for economists rather than a note for courses like Econ Math, where materials are selected from various sources including course handouts from SUFE, lecture notes from open scources and many great books. To make it a comprehensive one, I'll try to cover almost all maths needed for studying economics, including logic, algebra, analysis, topology, probability theory and the theory of optimization. And I'll add something more, basically based on the syllabus of the course I've taken. In this way can those(especially from SUFE) who're taking courses like Mathematical analysis refer to it.

Though served as a handbook, the book will be written as intuitive as possible so that all techniques and definitions are expressed in a natural way and readers can better understand them.

The book may be updated in a monthly basis.

Acknowledgement

First Author & Second Author

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Bibliography

Adams, M. (2021). *The Art of Creative Writing*. Writer's Press, London.

Brown, J. and Clark, R. (2023). The impact of climate change on biodiversity. *Environmental Science Quarterly*, 22(1):45–58.

Jones, E. (2022). *The History of Ancient Civilizations*. Academic Press, New York, 2nd edition.

Lee, S. and Kim, D. (2023). Advancements in renewable energy technologies. *Renewable Energy Reviews*, 78(4):501–515.

Martinez, C. (2022). *The Economics of Globalization*. Harvard University Press, Cambridge.

Phillips, R. (2022). *Ancient Mythology and Its Relevance Today*. Mythos Publications, San Francisco.

Smith, J. (2023). A comprehensive study on artificial intelligence. *Journal of Computer Science*, 45(3):201–215.

Turner, J. and Parker, E. (2023). Recent advances in nanotechnology. *Nano Letters*, 12(5):601–612.

Wilson, L. (2023). Recent discoveries in astrophysics. *Astrophysical Journal*, 635(2):315–328.

Wright, S. (2021). *Understanding Psychology: A Comprehensive Guide*. Oxford University Press, Oxford.