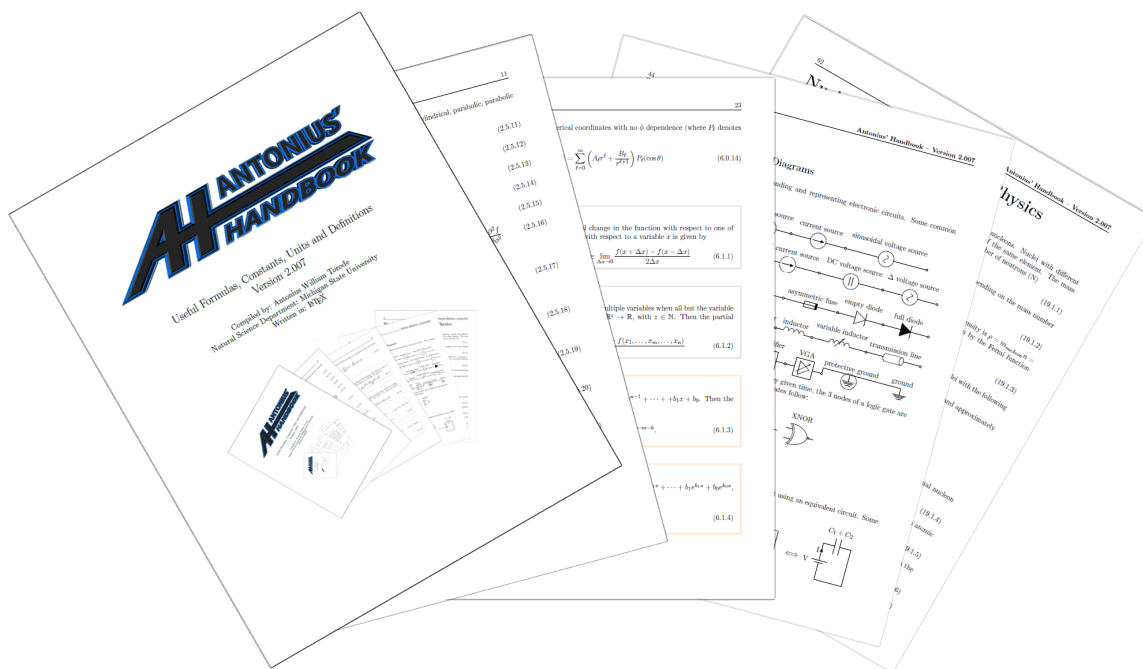


ANTONIUS' HANDBOOK

Useful Formulas, Constants, Units and Definitions
Volume I - Mathematical Mansion
Version 2.016

Compiled by: Antonius William Torode
Natural Science Department: Michigan State University
Written in: L^AT_EX



Preface

This document is a compilation of useful formulas, definitions, constants, and general information used throughout my own schooling as a reference while furthering education. It's purpose is to provide a complete 'encyclopedia' per say of various mathematical and significant ideas used often. The idea and motivation behind it is to be a quick reference providing easily accessible access to necessary information for either double checking or recalling proper formula for use in various situations due to my own shortcomings in matters of memorization. All the material in this document was either directly copied from one of the references listed at the end or derived from scratch. On occasion typos may exist due to human error but will be corrected when discovered.

The version number is updated every time the document is distributed, printed, or referred to. This ensures that there is no two copies with different information and similar version numbers. The latest update date is automatically set to the current date each time the document is edited. Please refrain from distributing this handbook without permission from the original author/compiler. As of version 1.035 this book is formatted for printing.

Courses Covered In This Book

This document encompasses a large portion of formula used throughout specific courses at Michigan state University. The courses which have information pertaining to something in this book are more than just listed below; however, below is a list of classes that the author took whilst compiling the information in this book. All course numbers correspond to Michigan State University courses at the time of adding them.

- | | |
|--|---|
| • AST 207/208/304: Astrophysics I/II/III | • PHY 415: Methods Of Theoretical Physics |
| • PHY 215: Thermodynamics & Modern Physics | • PHY 440: Electronics |
| • MTH 310: Abstract Algebra/Number Theory | • PHY 471/472: Quantum Physics I/II |
| • PHY 321: Classical Mechanics I | • PHY 481/482: Electricity and Magnetism I/II |
| • PHY 410: Thermal & Statistical Physics | • PHY 492: Introduction to Nuclear Physics |

The information in this book is in no way limited to the material used within the courses above. They serve as a simple guideline to what you will find within this document. For more information about this book or details about how to obtain your own copy please visit:

<https://msu.edu/~torodean/AHandbook.html>

Disclaimer

This book contains formulas, definitions, and theorems that by nature are very precise. Due to this, some of the material in this book was taken directly from other sources such as but not limited to Wolfram Mathworld. This is only such in cases where a change in wording could cause ambiguities or loss of information quality. Following this, all sources used are listed in the references section.

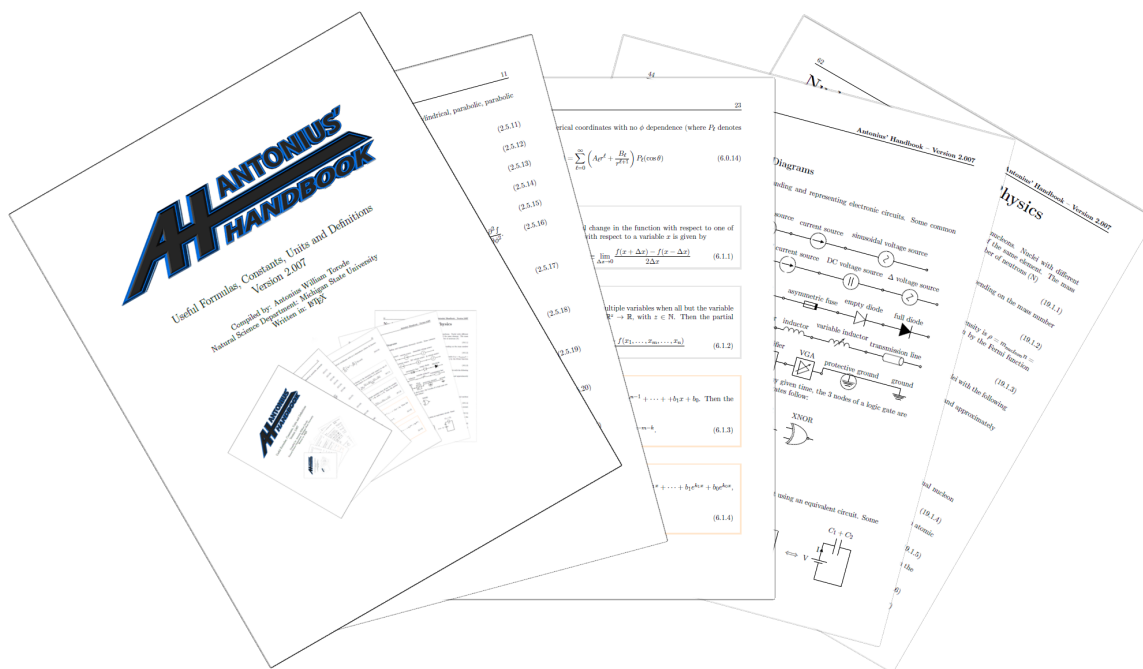
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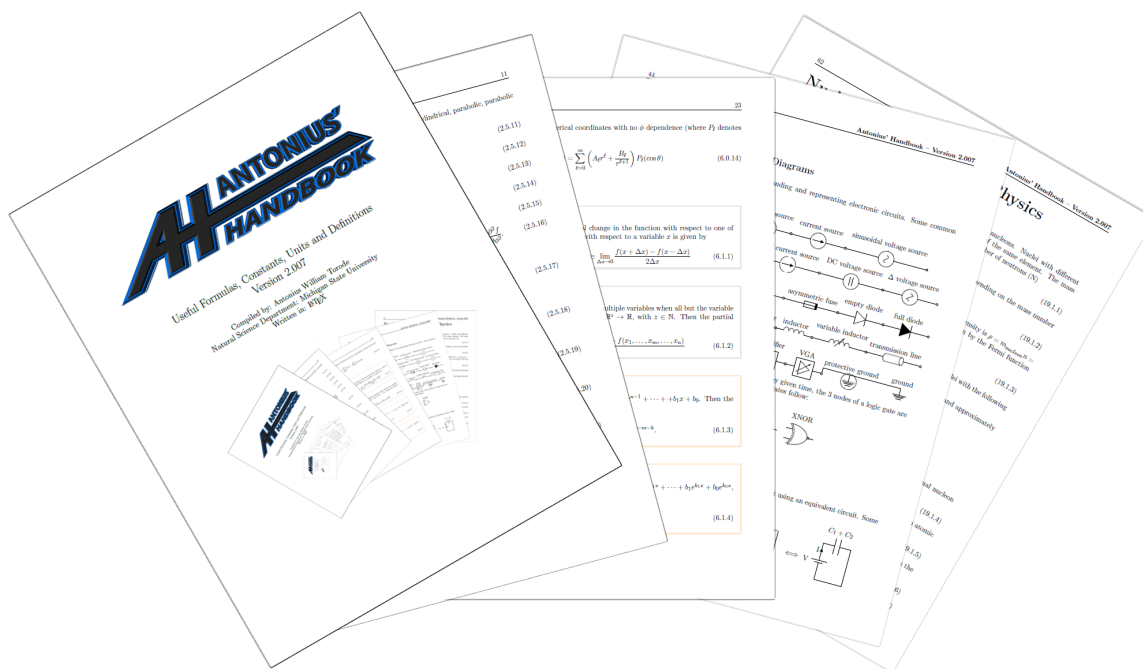
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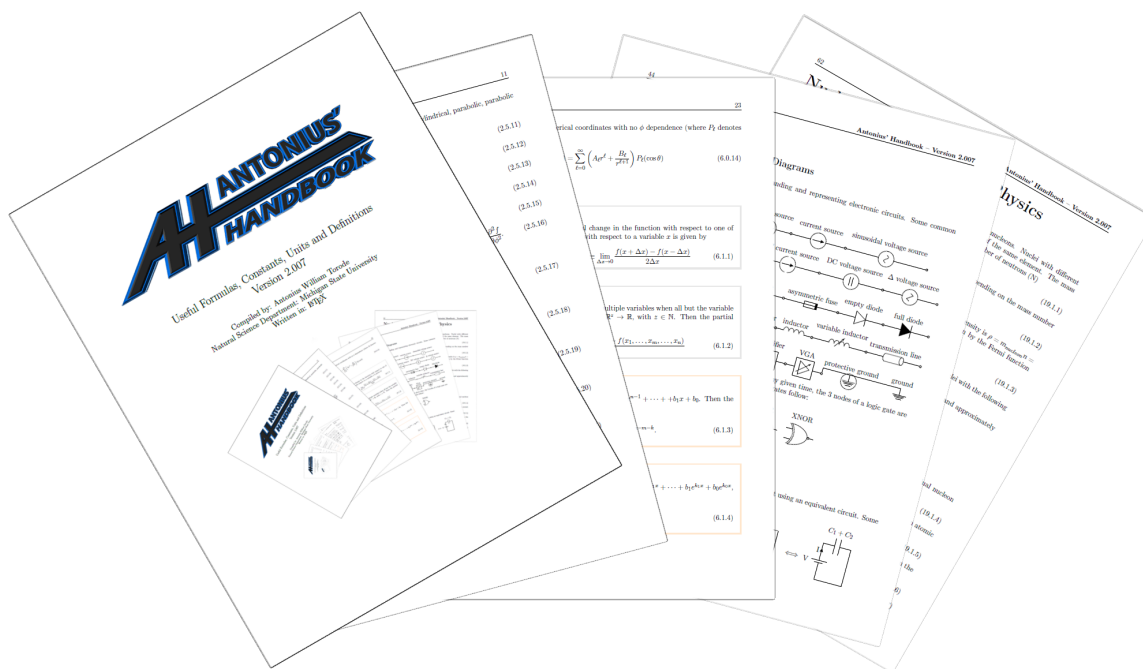
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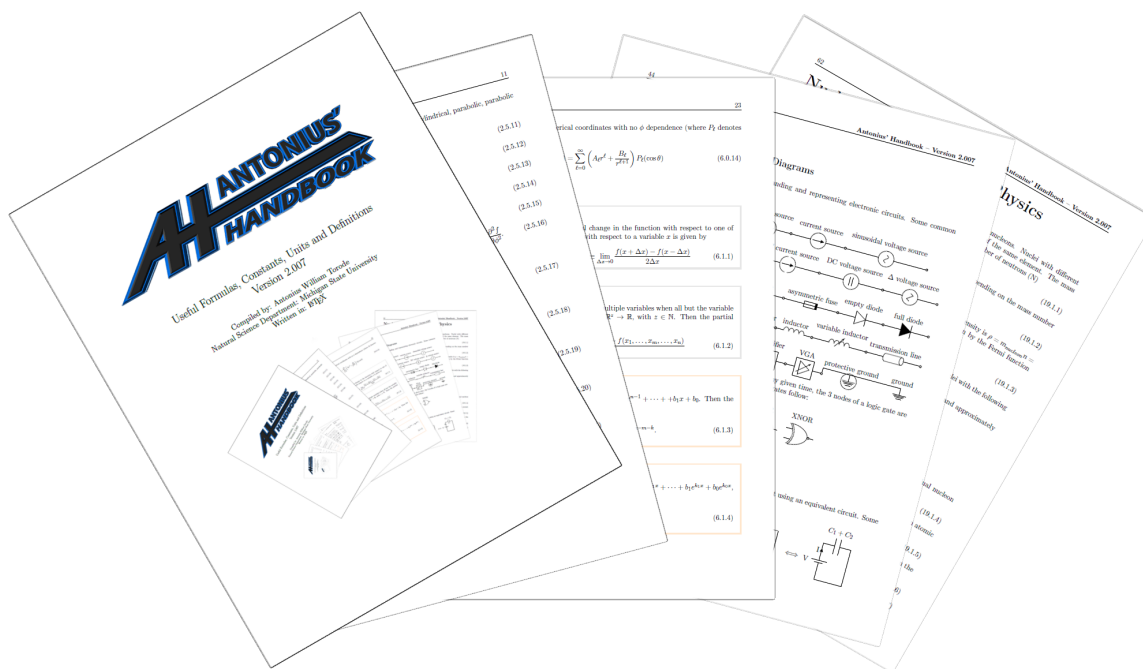
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