

Contents

| | |
|---------------------------|----------|
| Algebra | 1 |
| Linear Algebra | 1 |
| Algebraic Geometry | 1 |
| Other Topics | 1 |
| References | 2 |

Download [archive of math books](#) or access the [archive online](#).

NOTE: what is “geniometric equations”?

Algebra

- Basics of sets (Carrell, ch. 1)
 - Notation, cardinality
 - Functions, injectivity, surjectivity.(Pinter 57–58)
 - Diagrams (Awodey p2–5)
- Rings, commutative rings and fields
 - Derive rules for manipulating equations.(Pinter, ch. 17, ch. 20)
 - \mathbb{Z} , \mathbb{Q} , \mathbb{R} , \mathbb{C} , and fields in general (Carrell, ch. 2.4-2.5)
- Polynomial rings (Pinter, ch. 26; Carrell, ch. 2.6.4)
 - Horner’s method for polynomial evaluation
 - Lagrange interpolation using Sage

Linear Algebra

- Vector spaces (Carrell, ch. 6.1)
- Linear maps (Carrell, ch. 7.1)
- Different ways of looking at matrix multiplication
- Reduced row echelon form
- Linear systems
- Matrix inverse

(all from Carrell, ch 3-4.1)

Algebraic Geometry

- Coordinate transforms (Garrity, ch. 1; Holme, ch. 1-2)
- Conic sections (Garrity, ch. 1; Holme, ch. 1-2)
- Rational functions (Foote & Dummit 264; Palka, ch. 3.1)
 - Zeroes, poles
 - NOTE: What is a gap?
 - Asymptote(Holme, ch. 3.6)
- Limits (Abbott, ch. 2.2-2.3)
 - Newton–Raphson method (Wiki)
- Calculus, selected topics and reading from Abbott

Other Topics

- Combinatorics (Carrell ch–1.2)
- Completing the square (solving quadratics)
- Complex numbers: cartesian and polar forms. (Palka, ch. 1)

References

- Abbott, Stephen. “Understanding Analysis.” <<https://agorism.dev/book/math/anal/understanding-analysis-by-stephen-abbott.pdf>>.
- Awodey, Steve. “Category Theory.” <https://agorism.dev/book/math/cat/category-theory_steve-awodey.pdf>.
- Carrell, James. “Groups, Matrices and Vector Spaces.” <https://agorism.dev/book/math/linalg/groups-matrices-vector-spaces_james-carrell.pdf>.
- Foote, and Dummit. “Abstract Algebra.” <https://agorism.dev/book/math/alg/david-s_dummit_richard-m_foote-abstract-algebra-wiley.djvu>.
- Garrrity, Thomas. “Algebraic Geometry: A Problem Solving Approach.” <<https://agorism.dev/book/math/anal/understanding-analysis-by-stephen-abbott.pdf>>.
- Holme, Audun. “Royal Road to Algebraic Geometry.” <https://agorism.dev/book/math/ag/royal-road-algebraic-geometry_audun-holme.pdf>.
- Palka, Bruce. “Introduction to Complex Function Theory.” <https://agorism.dev/book/math/complex/introduction-to-complex-function-theory_bruce-palka.djvu>.
- Pinter, Charles. “Abstract Algebra.” <<https://agorism.dev/book/math/alg/charles-c-pinter-a-book-of-abstract-algebra-dover-publications.pdf>>.