

Mathematics for Chemistry, edition 6, 2021

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This electronic interactive textbook on mathematics for chemistry, edition 6, based on *Maple* worksheets, is released on 2021 July 21.

This book comprises two main divisions. Mathematics for chemistry as mathematical operations essential for use in chemical applications comprises nine chapters, as follows.

- 0 introduction -- exemplary illustrations of use of *Maple*
- 1 numbers, symbols and elementary functions
- 2 plotting, geometry, trigonometry and functions
- 3 differential calculus
- 4 integral calculus
- 5 calculus with multiple independent variables
- 6 linear algebra
- 7 differential and integral equations
- 8 probability, statistics, regression and optimisation

Mathematics of chemistry treats various topics that are commonly included in chemical curricula at undergraduate or post-graduate stages, in eight chapters as follows.

- 9 chemical equilibrium
- 10 group theory
- 11 graph theory
- 12 quantum mechanics in three parts -- model systems, atoms and molecules
- 13 optical molecular spectrometry
- 14 Fourier analysis
- 15 advanced chemical kinetics
- 16 electric and magnetic properties of chemical matter

Also included in this collection are an essay on Teaching Mathematics to Chemistry Students with Symbolic Computation and a periodic chart of the chemical elements incorporating various data on elemental properties.