This text introduces students to mathematical/computational methods in chemical kinetics, thermodynamics, quantum chemistry.

- Front Matter

- 1: Before We Begin...

- 2: Complex Numbers

- 3: Series
4: First Order Ordinary Differential Equations

5: Second Order Ordinary Differential Equations

6: Power Series Solutions of Differential Equations

7: Fourier Series
8: Calculus in More than One Variable

9: Exact and Inexact Differentials

10: Plane Polar and Spherical Coordinates

11: Operators
12: Partial Differential Equations

\[ \frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} \]
\[ \frac{\partial^2 v}{\partial x^2} + \frac{\partial^2 v}{\partial y^2} \]

• 13: Determinants

• 14: Vectors

\[ \begin{pmatrix} a_{1,1} & a_{1,2} & a_{1,3} & \ldots \\ a_{2,1} & a_{2,2} & a_{2,3} & \ldots \\ a_{3,1} & a_{3,2} & a_{3,3} & \ldots \\ \vdots & \vdots & \vdots & \ddots \end{pmatrix} \]

• 15: Matrices
16: Formula Sheets

• Back Matter

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