



SOCIETY OF ACTUARIES

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TABLE 1 **ORDERS OF COMPLEXITY IN MODELING**

Level 1 - Two body problem

Examples of satisfactory models include gravity, light through prism, two heat reservoirs, liver-pancreas, proton-electron.

Level 2 - N-identical body with local interaction

Examples of satisfactory models include Maxwell-Boltzmann's thermodynamics and the Ising model of ferromagnetism.

Level 3 - N-identical body with long-range interaction.

Level 4 - N-non-identical body with multi-interactions.

Modeling markets.

Modeling economic systems generally.

General actuarial Modeling.

Adapted from Tables 1.1(a) and (b) in Roehner, B.M., *Patterns of Speculation: A Study in Observational Econophysics*, Cambridge University Press 2002.