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Sinopsis

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Questions of maxima and minima have great practical significance, with applications to physics, engineering, and economics; they have also given rise to theoretical advances, notably in calculus and optimization. Indeed, while most texts view the study of extrema within the context of calculus, this carefully constructed problem book takes a uniquely intuitive approach to the subject: it presents hundreds of extreme value problems, examples, and solutions primarily through Euclidean geometry.

Key features and topics:

* Comprehensive selection of problems, including Greek geometry and optics, Newtonian mechanics, isoperimetric problems, and recently solved problems such as Malfatti's problem

* Unified approach to the subject, with emphasis on geometric, algebraic, analytic, and combinatorial reasoning

* Presentation and application of classical inequalities, including Cauchy--Schwarz and Minkowski's Inequality; basic results in calculus, such as the Intermediate Value Theorem; and emphasis on simple but useful geometric concepts, including transformations, convexity, and symmetry

* Clear solutions to the problems, often accompanied by figures

* Hundreds of exercises of varying difficulty, from straightforward to Olympiad-caliber