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inductive fallacy"; ""20. On not identifying equations and identities"; ""21. A surd equation"; ""22. The disappearing solution"; ""23. Solving an inequality"; ""24. An appearance of finite geometric sequences""
 ""25. Glide-reflecting the sine curve""""26. A trigonometric identity"; ""27. Floored by an Olympiad problem"; ""28. A New Identity for the Ceiling Function"; ""3 GEOMETRY"; ""1. The impossibility of angle bisection"; ""2. Trisecting an angle with ruler and compasses"; ""3. A loney way to square a circle"; ""4. The Steiner-Lehmus Theorem"; ""5. A geometry problem"; ""6. A case of irregularity"; ""7. A counterexample to Morley's Theorem"; ""8. Going for the stars"; ""9. Identifying the angle"; ""10. The speeder's delight"; ""11. A solution to problem 480""
 ""12. Tangency by double roots""""13. A puzzling graph"; ""14. The wilting lines"; ""15. The height of a trapezoid"; ""16. Forces with a given resultant"; ""17. A linear pythagorean theorem"; ""18. The surface area of a sphere"; ""19. Drenching a sphere"; ""20. Volume of a tin can"; ""21. The Puptent Problem"; ""22. The spirit is willing but the ham is rotten"; ""4 FINITE MATHEMATICS"; ""1. Rabbits reproduce; integers don't"; ""2. All positive integers are equal"; ""3. Every second square is the same"; ""4. Four weighings suffice"; ""5. Perron's paradox""
 ""6. There is a unique positive integer""

Sommario/riassunto

Through hard experience, mathematicians have learned to subject even the most evident assertions to rigorous scrutiny, as intuition and facile reasoning can often lead them astray. However, the impossibility and impracticality of completely watertight arguments make it possible for errors to slip by the most watchful eye. They are often subtle and difficult of detection. When found, they can teach us a lot and can present a real challenge to straighten out. Presenting students with faulty arguments to troubleshoot can be an effective way of helping them critically understand material, and it is for this reason that I began to compile fallacies and publish them first in the Notes of the Canadian Mathematical Society and later in the College Mathematics Journal in the Fallacies, Flaws and Flimflam section. I hoped to challenge and amuse readers, as well as to provide them with material suitable for teaching and student assignments. This book collects the items from the first eleven years of publishing in the CMJ. One source of such errors is the work of students. Occasionally, a text book will weigh in with a specious result or solution. Nonprofessional sources, such as newspapers, are responsible for a goodly number of mishaps, particularly in arithmetic (especially percentages) and probability; their use in classrooms may help students become critical readers and listeners of the media. Quite a few items come from professional mathematicians. The reader will find in this book some items that are not erroneous but seem to be. These need a fuller analysis to clarify the situation. All the items are presented for your entertainment and use. The mathematical topics covered include algebra, trigonometry, geometry, probability, calculus, linear algebra, and modern algebra.