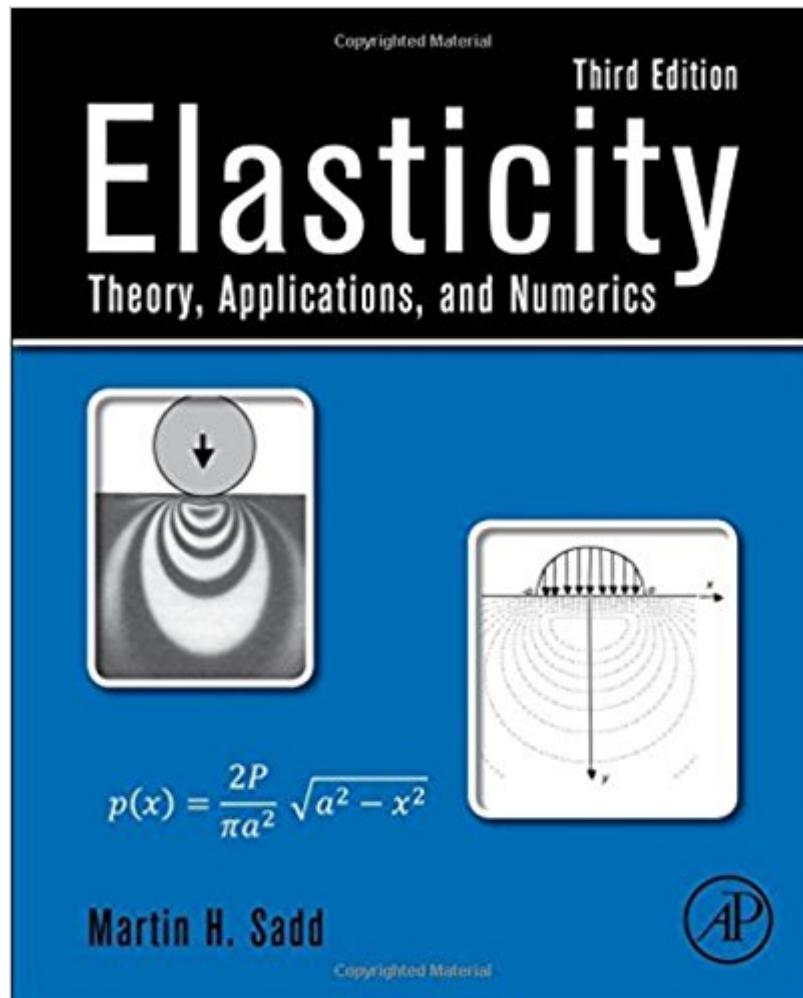




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Elasticity, Third Edition: Theory, Applications, And Numerics



Synopsis

Elasticity: Theory, Applications, and Numerics, Third Edition, continues its market-leading tradition of concisely presenting and developing the linear theory of elasticity, moving from solution methodologies, formulations, and strategies into applications of contemporary interest, such as fracture mechanics, anisotropic and composite materials, micromechanics, nonhomogeneous graded materials, and computational methods. Developed for a one- or two-semester graduate elasticity course, this new edition has been revised with new worked examples and exercises, and new or expanded coverage of areas such as spherical anisotropy, stress contours, isochromatics, isoclinics, and stress trajectories. Using MATLAB software, numerical activities in the text are integrated with analytical problem solutions. These numerics aid in particular calculations, graphically present stress and displacement solutions to problems of interest, and conduct simple finite element calculations, enabling comparisons with previously studied analytical solutions. Online ancillary support materials for instructors include a solutions manual, image bank, and a set of PowerPoint lecture slides. Thorough yet concise introduction to linear elasticity theory and applications. Only text providing detailed solutions to problems of nonhomogeneous/graded materials. New material on stress contours/lines, contact stresses, curvilinear anisotropy applications. Further and new integration of MATLAB software. Addition of many new exercises. Comparison of elasticity solutions with elementary theory, experimental data, and numerical simulations. Online solutions manual and downloadable MATLAB code.

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Customer Reviews

Martin H. Sadd is Emeritus Professor of Mechanical Engineering and Applied Mechanics at the University of Rhode Island. He received his Ph.D. in mechanics from the Illinois Institute of Technology and began his academic career at Mississippi State University. In 1979 he joined the faculty at Rhode Island and served as department chair from 1991 to 2000. Professor Sadd's teaching background is in the area of solid mechanics with emphasis in elasticity, continuum mechanics, wave propagation, and computational methods. He has taught elasticity at two academic institutions, in several industries, and at a government laboratory. Professor Sadd's research has been in the area of computational modeling of materials under static and dynamic loading conditions using finite, boundary, and discrete element methods. Much of his work has involved micromechanical modeling of geomaterials including granular soil, rock, and concretes. He has authored more than 70 publications and has given numerous presentations at national and international meetings.

Took a graduate course in elasticity. Although this book was not prescribed as text, but after scrambling over half a dozen of hieroglyphic texts I stumbled upon this one. It is by no means the perfect text, but in my opinion, if you read through, it's probably the easiest read among the current graduate texts available in elasticity. Examples are well designed and help grasp abstract theories better. I wish there were more rigorous examples worked out.

Book discusses materials science problems relating to the elasticity of the material. The book is acceptable but could use more detail about solving the problems.

Good

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