1. Record Nr. UNINA9910818447403321

Titolo	Mathematical sciences, technology, and economic competitiveness / / edited by James G. Glimm ; Board on Mathematical Sciences, Commission on Physical Sciences, Mathematics, and Applications, National Research Council
Pubbl/distr/stampa	Washington, D.C., : National Academy Press, 1991
ISBN	1-280-20388-9 9786610203888 0-309-58327-6 0-585-14357-9
Edizione	[1st ed.]
Descrizione fisica	1 online resource (126 p.)
Altri autori (Persone)	GlimmJames GriffithsPhillip <1938->
Disciplina	510.08
Soggetti	Mathematics - Study and teaching Mathematics - Research Technology transfer Competition, International
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Board chairman: Phillip A. Griffiths.
Nota di bibliografia	Includes bibliographical references (p. 96-98).
Nota di contenuto	MATHEMATICAL SCIENCES, TECHNOLOGY, AND ECONOMIC COMPETITIVENESS -- COPYRIGHT -- PREFACE -- CONTENTS -- EXECUTIVE SUMMARY -- FINDINGS -- RECOMMENDATIONS -- CONCLUSIONS -- 1 INTRODUCTION -- 2 KEY AMERICAN INDUSTRIES -- 2.1 AIRCRAFT -- 2.2 SEMICONDUCTORS AND COMPUTERS -- 2.3 PETROLEUM -- 2.4 AUTOMOBILES -- 2.5 TELECOMMUNICATIONS -- 3 THE PRODUCT CYCLE -- 3.1 ECONOMIC PLANNING -- 3.2 SIMULATION AND DESIGN-AIRCRAFT -- 3.3 DESIGN AND CONTROL OF COMPLEX SYSTEMS -- 3.4 MACHINE TOOLS FOR MANUFACTURING -- 3.5 SIMULATION AND PRODUCTION-PETROLEUM -- 3.6 STATISTICAL QUALITY CONTROL AND IMPROVEMENT -- 3.7 MANUFACTURING PROCESS CONTROL -- 3.8 SENSOR-BASED MANUFACTURING -- 3.9 MANUFACTURING STANDARDS -- 3.10 PRODUCTION, INVENTORIES, AND MARKETING -- 3.11 MAINTENANCE AND REPAIR -- 4 THE

TECHNOLOGY BASE -- 4.1 TECHNOLOGY TRANSFER -- 4.2 SIMULATION AND COMPUTATIONAL MODELING -- Examples -- Resources -- Requirements -- 4.3 STATISTICAL QUALITY IMPROVEMENT -- 4.4 DIFFERENTIAL EQUATIONS -- Asymptotics -- Nonlinear Phenomena -- Stochastic Phenomena -- Control Theory -- 4.5 OPTIMIZATION, DISCRETE, AND COMBINATORIAL MATHEMATICS -- Sequential Quadratic Programming Methods -- Linear Programming -- Discrete Optimization -- Algebraic Methods -- 4.6 STATISTICAL AND PROBABILISTIC MODELS -- Stochastic Modeling -- Spatial Statistics -- 4.7 MANPOWER, EDUCATION, AND TRAINING -- 5 FINDINGS AND RECOMMENDATIONS -- Findings -- Recommendations -- REFERENCES -- APPENDICES -- Appendix A Studies of Advanced Technology and Economic Competitiveness -- 1. Emerging Technologies from the Department of Commerce -- 2. The Federal High Performance Computing Program -- 3. The National Academy of Engineering, 10 Outstanding Achievements -- 4. The Departments of Defense and Energy, 20 Critical Technologies -- 5. The Aerospace Industries Association (AIA), 10 Emerging Technologies for the 1990s. 6. The MIT Commission on Industrial Productivity -- 7. Technology Policy and Its Effect on the National Economy -- 8. Governing America -- 9. A Strategic Industry at Risk -- 10. Success Factors in Critical Technologies -- 11. Engineering Design -- Appendix B Studies by the Mathematical Sciences Community.