

CONTENTS

1. MATHEMATICAL EXPERIMENTS	1
Computer Enhanced Learning: The Loughborough Experience A.C. Bajpai and P.A. Carruthers	3
EDGE: The Educational Differential Geometry Environment T. Banchoff and R. Schwartz	11
Geometric Crystallography and Computing in Industry R. Farinato and L. Loreto	31
Teaching Calculus as a Laboratory Course H. Flanders	43
Teaching Mathematical and Physical Concepts with an Analog Simulator S. Feliziani, V. Franchina, C. Mengoni and A. Polzonetti	49
Mathematical Experiments on the Computer U. Grenander	57
Dynamical Systems D. Knapp	69
Computer Experiments in Differential Equations H. Koçak	75
Using Computers in Calculus Examples-Classes for Engineers M. Mascarello and A.R. Scarafiotti	93
The Mandelbrot Set: A Paradigm for Experimental Mathematics H.-O. Peitgen, H. Jürgens and D. Saupe	99
Calculus with a PC F. Simons	115
An Algorithm for Recursive Generation of a Class of Convex Uniform Polyhedra A. Spizzichino	119

2. TEACHING EXPERIMENTS	125
GALOIS: An Instructional System in Algebra for Computer Science Students	
M.A. Alberti, A. Bertoni, G. Mauri, N. Sabadini and M. Torelli	127
Qualitative Study of Differential Equations: Results from Some Experiments with Micro-Computers	
M. Artigue, V. Gautheron and P. Sentenac	135
The CALM Project	
C.E. Beevers, A.R. Agnew, B.S.G. Cherry, D.E.R. Clark, M.G. Foster, G.R. McGuire and J.H. Renshaw	145
Experimental Computations: A Maieutic Approach to Abstract Mathematics	
P. Boieri	153
The Home Microcomputer as an Aid to Distance Teaching	
T.M. Bromilow, J.A. Daniels and J.M. Greenberg	167
The Laboratory of Mathematics: Computers as an Instrument for Teaching Calculus	
I. Capuzzo Dolcetta, M. Emmer, M. Falcone and S. Finzi Vita	175
Didactical Aspects of the Use of Computers for Teaching and Learning Mathematics	
B. Cornu	187
A European Cooperation on the Use of Computers in Mathematics	
M. Dechamps	197
Study of Sequences Using a Personal Computer	
P. Jarraud and C. Laurent	211
Mathematics in a Computer Age	
H. Lehning	219
Computers and the Teaching of Statistical Practice	
E.J. Redfern	227
The Teaching of Mathematics in a Computer Age	
D.L. Salinger	243

3. SOFTWARE REPORTS	253
Software Reports by: I. Capuzzo Dolcetta and M. Falcone	255
H. Flanders	257
S. Feliziani, V. Franchina, C. Mengoni and A. Polzonetti	259
P. Jarraud	261
H. Koçak	265
H. Lehning and R. Rolland	267
C. Pellegrino	271
F. Simons	275
4. APPENDIX: Film Festival	277
1. Film Festival (with colour illustrations)	279
2. Colour illustrations to the articles by: Farinato and Loreto Koçak	282
Peitgen et al.	283