## Contents

Roger Penrose	ix
Introduction MIRCEA PITICI	xv
The Prospects for Mathematics in a Multimedia Civilization PHILIP J. DAVIS	1
Fearful Symmetry IAN STEWART	23
E pluribus unum: From Complexity, Universality TERENCE TAO	32
Degrees of Separation GREGORY GOTH	47
Randomness CHARLES SEIFE	52
Randomness in Music  Donald E. Knuth	56
Playing the Odds Soren Johnson	62
Machines of the Infinite John Pavlus	67
Bridges, String Art, and Bézier Curves RENAN GROSS	77
Slicing a Cone for Art and Science Daniel S. Silver	90
High Fashion Meets Higher Mathematics KELLY DELP	109

viii Contents

The Jordan Curve Theorem Is Nontrivial	
Fiona Ross and William T. Ross	120
Why Mathematics? What Mathematics?	
Anna Sfard	130
Math Anxiety: Who Has It, Why It Develops,	
and How to Guard against It	
Erin A. Maloney and Sian L. Beilock	143
How Old Are the Platonic Solids?	
DAVID R. LLOYD	149
Early Modern Mathematical Instruments	
JIM BENNETT	163
A Revolution in Mathematics? What Really Happened	
a Century Ago and Why It Matters Today	
Frank Quinn	175
Errors of Probability in Historical Context	
Prakash Gorroochurn	191
The End of Probability	
Elie Ayache	213
An abc Proof Too Tough Even for Mathematicians	
Kevin Hartnett	225
Contributors	231
Notable Texts	237
Acknowledgments	241
Credits	243