

# CONTENTS

PREFACE *ix*

## QUADRANT ONE

### CONCERNING SOME MEN OF MATHEMATICS

- 1° Newton's original bed, 3
- 2° Plato's shade tree, 4
- 3° Hommage à Archimède, 5
- 4° A prophecy, 6
- 5° An impious remark, 6
- 6° At long last, 6
- 7° Aryabhata, 7
- 8° Sir Henry Billingsley, 7
- 9° Philatelists take note, 7
- 10° God versus mathematics, 8
- 11° Most dogs are nicer than most people, 8
- 12° Crelle's Journal, 8
- 13° A calculus antagonist, 9
- 14° Miller mathematician, 9
- 15° Weaver mathematician, 10
- 16° Sharing a chair, 11
- 17° Newton, the theologian, 11
- 18° Bust of Ramanujan unveiled, 12
- 19° Hardy's lectures on Ramanujan, 12
- 20° Hardy's most ardent desires, 12
- 21° Ever a logician, 12
- 22° An unusual conference, 13
- 23° A Christmas card, 14
- 24° An evaluation, 14
- 25° Mother's tongue, 14
- 26° An unintended hysteron proteron, 15
- 27° Misprints, 15
- 28° Mark Kac, 15
- 29° A hefty tome, 16

## CONTENTS

### ALBERT EINSTEIN

- 30° Lost, 17
- 31° The painted door, 17
- 32° Einstein's telephone, 19
- 33° A discarded photograph, 19
- 34° Sailing, 19
- 35° Einstein as a dyslexic, 20
- 36° Absentminded professor, 20
- 37° Trying to catch vibes, 21
- 38° A tense moment, 21
- 39° A bust of Einstein, 21
- 40° Absence of adulation, 22
- 41° Disdaining adulation, 22
- 42° A contrast, 23
- 43° A record?, 23
- 44° Auctioning a manuscript, 24
- 45° The Nehru azalea, 24
- 46° Cross-purposes, 25
- 47° A favorite short story, 25
- 48° An antidote to tiredness, 25
- 49° A great grief, 25
- 50° Einstein's brain, 25
- 51° A code word, 26

### EINSTEIN'S THEORY OF RELATIVITY

- 52° A simple explanation, 26
- 53° The big brain, 26
- 54° Down with Einstein, 27
- 55° The two buckets, 27
- 56° Many things are relative, 27
- 57° It's all relative, 27
- 58° No difference, 27
- 59° Relative density, 28
- 60° Everything is relative, 28

### EINSTEIN AND CHILDREN

- 61° A useful accomplishment, 28
- 62° An explanation, 28
- 63° His hair, 28
- 64° Chicken pox, 28

## CONTENTS

- 65° The true account, 29
- 66° Quick on the draw, 30
- 67° Childlike sense of play, 30
- 68° Some correspondence, 30

### EINSTEIN'S HUMOR

- 69° A new definition, 30
- 70° Tiger, 30
- 71° Moses, 31
- 72° Chico, 31
- 73° Advice, 31

### EINSTEIN QUOTES AND COMMENTS

- 74° More Einstein quotes, 31
- 75° An Einstein calendar, 31
- 76° On Goethe, 32
- 77° On convincing one's colleagues, 32
- 78° Subtle is the Lord, 32
- 79° Contemplating a death, 33
- 80° On racism, 33
- 81° Einstein's formula for success, 33
- 82° Golden silence, 33
- 83° Really?, 34
- 84° Concentration Camp, 34

### LOBACHEVSKI AND JÁNOS BOLYAI

- 85° Helping one up the ladder, 34
- 86° Lobachevski as a lover of nature, 34
- 87° A comparison, 35
- 88° A sequel to a well-known story, 35
- 89° János Bolyai's disposition, 36
- 90° A universal language, 36

## QUADRANT TWO

### JULIAN LOWELL COOLIDGE

- 91° Probability, 39
- 92° Calculating, 39

## CONTENTS

- 93° Wit and humor, 40
- 94° The watch episode, 40
- 95° Sandy, 40
- 96° An observation, 41

### SOME MORE STORIES ABOUT MEN OF MATHEMATICS

- 97° Some simple mathomagic, 41
- 98° A treasure hunt, 42
- 99° An interesting judgment, 43
- 100° Athletic mathematician, 43
- 101° An absentminded mathematician, 43
- 102° Re the new math, 43
- 103° Imbibers, 44
- 104° Drawing lots, 44
- 105° Thomas Mann's novel, 44
- 106° The bookkeeper and the surveyor, 44
- 107° An unusual bid to fame, 45
- 108° A thought stimulator, 45

### SOME LITERARY SNIPS AND BITS

- 109° Imitation, 46
- 110° A function of time, 46
- 111° A logical conclusion, 46
- 112° The pen is mightier than the surd, 47
- 113° An upper bound, 47
- 114° One of the greatest detectives of all time, 47
- 115° No room for argument, 47
- 116° The complex problem of woman, 48
- 117° Solving problems, 48
- 118° An apt phrase, 48
- 119° The value of twice one, 48
- 120° Squares, 48
- 121° Probability, 49
- 122° A mathematical law?, 49
- 123° Common sense, 49
- 124° *Reductio ad absurdum*, 50
- 125° The perils of probability, 50
- 126° Enthralling arithmetic, 50
- 127° *Reductio ad absurdum* again, 50
- 128° Euclid restores sanity, 51

## CONTENTS

### SHERLOCKIANA

- 129° Similar triangles, 51
- 130° Conclusions of a trained observer, 52
- 131° An elopement in Euclid's fifth proposition, 52
- 132° The rule of three, 52
- 133° Professor Moriarty and the binomial theorem, 52
- 134° Professor Moriarty and "The Dynamics of an Asteroid," 53

### POETRY, RHYMES, AND JINGLES

- 135° Lines found written in a college mathematics text, 53
- 136° Relativity, 54
- 137° Elliptic integrals, 54
- 138° Was the bridge refereed?, 54
- 139° Re pure mathematics, 54
- 140° The law of the syllogism, 55
- 141° A valentine jingle, 55
- 142° Shank's famous error, 55
- 143° The equality of null sets, 55
- 144° A limerick, 56
- 145° Calculating machines, 56
- 146° Paradox, 56
- 147° Getting Down to the Nitty-Gritty, 56
- 148° The Higher Pantheon in a Nutshell, 56
- 149° Newton and the apple, 56
- 150° A clerihew, 57
- 151° An inversion transformation, 57
- 152° The set of all sets which belong to themselves, 57
- 153° Achilles and the tortoise, 57
- 154° The integers, 58
- 155° Song of the Screw, 58

### COMPUTERS AND CALCULATORS

- 156° The ever-recurring excuse, 60
- 157° An important date, 60
- 158° Calculators in the classroom, 62
- 159° A recent (1986) blurb, 62
- 160° An interesting little-known fact, 62
- 161° A computing contest, 63
- 162° The real danger, 63
- 163° A cautionary tale, 63

## CONTENTS

- 164° The word computer, 63
- 165° A special program, 63
- 166° Boy to father, 63
- 167° An important point, 63
- 168° Chisanbop, 64
- 169° The first two laws of computer programming, 66

### ALGEBRA

- 170° The rules of algebra, 66
- 171° Symbolism, 66
- 172° A fable about Ph.D. oral exams, 67
- 173° Another fable about Ph.D. oral exams, 67
- 174° Hatred of logarithms, 67
- 175° What price common logs?, 67
- 176° I see, 68
- 177° Oh!, 68
- 178° Addition and subtraction, 68
- 179° What's in a name?, 68
- 180° Dolbear's law, 68

## *QUADRANT THREE*

### GEOMETRY

- 181° Impossible geometry, 73
- 182° Political geometry, 73
- 183° Advice to a geometry student, 73
- 184° The Great Pyramid and pi, 73
- 185° An ardent pyramidologist, 75
- 186° Definition of a circle, 75
- 187° Why we study mathematics, 75
- 188° The reason for self-imposed limitations, 75
- 189° Books and the fourth dimension, 75
- 190° Concerning a geometry book, 76
- 191° A matter of distance, 76
- 192° A triple-barreled pun, 76
- 193° Time often tells, 76
- 194° The reason why, 76
- 195° Progress, 77

## CONTENTS

- 196° A proportion, 77
- 197° A mermaid, 77
- 198° A measurement of distance, 77
- 199° An old definition, 77
- 200° A crackpot in academia, 78
- 201° Trisectors, 78
- 202° Advice, 78
- 203° An Andy Griffith story, 79
- 204° A truism, 79
- 205° Another truism, 79
- 206° What is a curve?, 79
- 207° Perhaps, 79
- 208° A geodesic, 79
- 209° Square people, 80
- 210° Why the world is round, 80

### NUMBERS

- 211° Children in Germany, 80
- 212° Martinis in Germany, 80
- 213° On the ski slopes in Austria, 80
- 214° How big is a billion?, 80
- 215° Ignorance of the law is no excuse, 80
- 216° The federal budget, 81
- 217° Bad manners, 81
- 218° A man is like a fraction, 81
- 219° Phenomenal memory ability, 81
- 220° A rumor, 82
- 221° Of course, 82
- 222° Slow progress, 82
- 223° Aztec use of chocolate as a counting unit, 82
- 224° Numbering the math courses at Harvard, 82
- 225° Test for divisibility by 7, 83
- 226° On adding columns of figures, 83
- 227° Hidden laws of number, 84
- 228° After the death of Vern Hoggatt, 84
- 229° A criticism, 84
- 230° Pólya's reply, 84
- 231° Fortunate numbers, 84
- 232° Smith numbers, 85
- 233° A truism, 86

## CONTENTS

- 234° Another truism, 86
- 235° A Murphy's Law, 86
- 236° Another Murphy's Law, 86
- 237° A smart animal, 86

### PROBABILITY AND STATISTICS

- 238° A raffle, 86
- 239° Theory versus reality, 87
- 240° Theory versus reality again, 87
- 241° Conversion, 87
- 242° A law of probability, 87
- 243° Advantage of a near-zero probability, 87
- 244° A classification, 87
- 245° An interesting quote, 88
- 246° Advice, 88
- 247° Characterizing a statistician, 88
- 248° Statisticians placed end to end, 88
- 249° Boys and girls, 88
- 250° Chances, 88
- 251° A statistic, 88
- 252° Economists versus statisticians, 88
- 253° Selling roof insurance, 89
- 254° Statistics and a bikini bathing suit, 89
- 255° Further statistics, 89
- 256° More statistics, 89
- 257° There are figures and there are figures, 90
- 258° Of course, 90
- 259° Statistics, 90
- 260° A statistical figure, 90
- 261° Several heads better than one, 90
- 262° A naive statistician, 91

### FLAWED PROBLEMS

- 263° "Wrong" answers trip testers, 91
- 264° The challenger of PSAT Question 44, 92
- 265° Another flawed SAT problem, 93
- 266° An unforgettable score, 93
- 267° Resurrection of an old problem, 93
- 268° A recurring flawed problem, 94
- 269° The clock problem, 94
- 270° The induction problem, 95



## QUADRANT FOUR

### RECREATION CORNER

- 271° An optical illusion, 99
- 272° Another optical illusion, 99
- 273° A mnemonic for pi, 99
- 274° A mnemonic for  $e$ , 100
- 275° The triangle mnemonic, 100
- 276° Geometric and algebraic viewpoints, 100
- 277° Iff, 101
- 278° 3° below zero, 102
- 279° A prediction, 102
- 280° A proof by mathematical induction, 102
- 281° Another proof by mathematical induction, 102
- 282° Miscellaneous methods for proving theorems, 103
- 283° The square root of passion, 103
- 284° Observed on an automobile bumper sticker, 103
- 285° A brief list of mathematical phrases with their most common meanings, 103
- 286° An octagon, 104
- 287° The new mathematics, 104
- 288° Take mathematics, 104
- 289° The revelation, 105
- 290° Hoggatt's solution of a numbers game, 105
- 291° A unit of measure for beauty, 105
- 292° Daffynitions, 106

### HAVE YOU HEARD?

- 293° Set theory, 106
- 294° Extra-set theory, 106
- 295° The Möbius strip, 107
- 296° The energy equation, 107
- 297° The alternate field theory, 108
- 298° A complete ordered field, 108
- 299° Unified field theory, 108
- 300° The origin of topology, 108
- 301° The theory of logs simplified, 109

### MR. PALINDROME

- 302° An interesting date, 110
- 303° A large palindromic square, 110

## CONTENTS

- 304° A triangular palindrome, 110
- 305° An interesting palindrome, 111
- 306° A personalized license plate, 111
- 307° Prime palindromic postage from Crittenden, 112
- 308° Prime palindromic representations of 20-cent postage, 112
- 309° United States cities with prime palindromic zip codes, 115
- 310° For Crittenden's files, 116

### EXAMPLES OF RECREATIONAL MATHEMATICS BY THE MASTER

- 311° The game of aggregates, 117
- 312° A contribution from the third grade, 118
- 313° The game of mama-thematics, 118
- 314° A holiday permutacrostic, 120
- 315° A holiday message in permutacrostic, 120
- 316° A coffee expert, 121
- 317° An unusual bid to fame, 122
- 318° Great problemist, 122
- 319° A tribute, 122
- 320° Paper folder, 123
- 321° Names of mathematicians in timely anagrams, 123
- 322° Initialed numbers, 124
- 323° Matching doubles, 124
- 324° Are you letter-perfect?, 125
- 325° A tale with the homonymic powers of two, 126
- 326° Dig the ten digits, 126
- 327° An invariant determinant, 127
- 328° Some integrations, 127
- 329° The famous names game, 129

### MISCELLANEA

- 330° Ronald Reagan and mathematics, 130
- 331° Re the metric system, 131
- 332° President Garfield and the metric system, 131
- 333° It all depends, 131
- 334° The good of it all, 132
- 335° There's always an easier way, 132
- 336° A perilous act, 132
- 337° The author Schnitt, 132
- 338° Boiling water, 133
- 339° Obvious, 133

## CONTENTS

- 340° Again, obvious, 134
- 341° Mathematicians at work, 134
- 342° A faultless rejection, 134
- 343° The applicability of mathematics, 134
- 344° The power of memory, 135
- 345° A perfect notation, 135
- 346° An indictment, 135
- 347° A nasty taste in the mouth, 135
- 348° An editorial comment, 135
- 349° The St. Augustine quote, 136
- 350° Student resourcefulness, 136
- 351° Mathematics compared to an oyster, 137
- 352° A philosophy of learning and teaching, 137
- 353° The checker king, 138
- 354° Cistern problems, 139
- 355° Von Neumann and a trick problem, 140
- 356° Farkas Bolyai's many interests, 142
- 357° Adolphe Quetelet and statistics, 143
- 358° Doubling an estimate, 143
- 359° A salacious book?, 143
- 360° A remarkable factorization, 143

## *EPILOGUE*

- SOME MATHEMATICAL HUMOR, IN MINUTE DOSES, 147
- SOME BITS AND TIPS ON TEACHING MATHEMATICS, 159
- SOME LOGICAL AND SOME ILLOGICAL MOMENTS, 165
  
- INDEX, 171