

# Contents

## Volume 2

<b>G. Arithmetic functions</b>	859
Commentary on G: Arithmetic functions by <i>Kevin Ford</i> . . . . .	861
G1 On functions $\varphi(n)$ and $\sigma(n)$ . . . . .	866
G2 Sur l'équation $\varphi(x) = m$ . . . . .	871
G3 Sur un problème concernant la fonction $\varphi(n)$ . . . . .	875
G4 Distributions of the values of some arithmetical functions with <i>P. Erdős</i> . . . . .	877
G5 On the functions $\varphi(n)$ and $\sigma(n)$ with <i>A. Mąkowski</i> . . . . .	890
G6 On integers not of the form $n - \varphi(n)$ with <i>J. Browkin</i> . . . . .	895
<b>H. Divisibility and congruences</b>	899
Commentary on H: Divisibility and congruences by <i>H. W. Lenstra jr.</i> . . . . .	901
H1 Sur un problème de P. Erdős . . . . .	903
H2 On the congruence $a^x \equiv b \pmod{p}$ . . . . .	909
H3 On the composite integers of the form $c(ak + b)! \pm 1$ . . . . .	912
H4 On power residues and exponential congruences . . . . .	915
H5 Abelian binomials, power residues and exponential congruences . . . . .	939
H6 An extension of Wilson's theorem with <i>G. Baron</i> . . . . .	971
H7 Systems of exponential congruences . . . . .	975
H8 On a problem in elementary number theory with <i>J. Wójcik</i> . . . . .	987
H9 On exponential congruences . . . . .	996
H10 Une caractérisation arithmétique de suites récurrentes linéaires avec <i>Daniel Barsky et Jean-Paul Bézivin</i> . . . . .	1001
H11 On power residues with <i>M. Skalba</i> . . . . .	1012

<b>I. Primitive divisors</b>	1031
Commentary on I: Primitive divisors by <i>C. L. Stewart</i> . . . . .	1033
I1 On primitive prime factors of $a^n - b^n$ . . . . .	1036
I2 On primitive prime factors of Lehmer numbers I . . . . .	1046
I3 On primitive prime factors of Lehmer numbers II . . . . .	1059
I4 On primitive prime factors of Lehmer numbers III . . . . .	1066
I5 Primitive divisors of the expression $A^n - B^n$ in algebraic number fields . .	1090
I6 An extension of the theorem on primitive divisors in algebraic number fields	1098
<b>J. Prime numbers</b>	1103
Commentary on J: Prime numbers by <i>Jerzy Kaczorowski</i> . . . . .	1105
J1 Sur certaines hypothèses concernant les nombres premiers with <i>W. Sierpiński</i> . . . . .	1113
J2 Remarks on the paper “Sur certaines hypothèses concernant les nombres premiers” . . . . .	1134
J3 A remark on a paper of Bateman and Horn . . . . .	1142
J4 On two theorems of Gelfond and some of their applications Section 5 . . . . .	1145
J5 On the relation between two conjectures on polynomials . . . . .	1154
<b>K. Analytic number theory</b>	1193
Commentary on K: Analytic number theory by <i>Jerzy Kaczorowski</i> . . . . .	1195
K1 On Siegel’s zero with <i>D. M. Goldfeld</i> . . . . .	1199
K2 Multiplicative properties of the partition function with <i>E. Wirsing</i> . . . . .	1211
K3 On an analytic problem considered by Sierpiński and Ramanujan . . . . .	1217
K4 Class numbers and short sums of Kronecker symbols with <i>J. Urbanowicz and P. Van Wamelen</i> . . . . .	1224
<b>L. Geometry of numbers</b>	1245
Commentary on L: Geometry of numbers by <i>Wolfgang M. Schmidt</i> . . . . .	1247
L1 A decomposition of integer vectors II with <i>S. Chaladus</i> . . . . .	1249
L2 A decomposition of integer vectors IV . . . . .	1259
L3 A property of polynomials with an application to Siegel’s lemma . . . . .	1274
L4 On vectors whose span contains a given linear subspace with <i>I. Aliev and W. M. Schmidt</i> . . . . .	1288

<b>M. Other papers</b>	1303
Commentary on M: Other papers <i>by Stanisław Kwapien</i> . . . . .	1305
The influence of the Davenport–Schinzel paper in discrete and computational geometry <i>by Endre Szemerédi</i> . . . . .	1311
M1 Sur l'équation fonctionnelle $f[x + y \cdot f(x)] = f(x) \cdot f(y)$ <i>avec S. Gołab</i> . . . . .	1314
M2 A combinatorial problem connected with differential equations <i>with H. Davenport</i> . . . . .	1327
M3 An analogue of Harnack's inequality for discrete superharmonic functions . . . . .	1338
M4 An inequality for determinants with real entries . . . . .	1347
M5 Comparison of $L^1$ - and $L^\infty$ -norms of squares of polynomials <i>with W. M. Schmidt</i> . . . . .	1350
<b>Unsolved problems and unproved conjectures</b>	1365
Unsolved problems and unproved conjectures proposed by Andrzej Schinzel in the years 1956–2006 arranged chronologically . . . .	1367
<b>Publication list of Andrzej Schinzel</b>	1375

# Volume 1

<b>A. Diophantine equations and integral forms</b>	<b>1</b>
Commentary on A: Diophantine equations and integral forms <i>by R. Tijdeman</i> . . . . .	3
A1 Sur les nombres de Mersenne qui sont triangulaires <i>avec Georges Browkin</i> . . . . .	11
A2 Sur quelques propriétés des nombres $3/n$ et $4/n$ , où $n$ est un nombre impair	13
A3 Sur l'existence d'un cercle passant par un nombre donné de points aux coordonnées entières . . . . .	17
A4 Sur les sommes de trois carrés . . . . .	18
A5 On the Diophantine equation $\sum_{k=1}^n A_k x_k^{\vartheta_k} = 0$ . . . . .	22
A6 Polynomials of certain special types <i>with H. Davenport and D. J. Lewis</i> . . . . .	27
A7 An improvement of Runge's theorem on Diophantine equations . . . . .	36
A8 On the equation $y^m = P(x)$ <i>with R. Tijdeman</i> . . . . .	41
A9 Zeta functions and the equivalence of integral forms <i>with R. Perlis</i> . . . . .	47
A10 Quadratic Diophantine equations with parameters <i>with D. J. Lewis</i> . . . . .	54
A11 Selmer's conjecture and families of elliptic curves <i>with J. W. S. Cassels</i> . . . . .	62
A12 Families of curves having each an integer point . . . . .	67
A13 Hasse's principle for systems of ternary quadratic forms and for one biquadratic form . . . . .	87
A14 On Runge's theorem about Diophantine equations <i>with A. Grytczuk</i> . . . . .	93
A15 On sums of three unit fractions with polynomial denominators . . . . .	116
A16 On equations $y^2 = x^n + k$ in a finite field <i>with M. Skatba</i> . . . . .	124
<b>B. Continued fractions</b>	<b>127</b>
Commentary on B: Continued fractions <i>by Eugène Dubois</i> . . . . .	129
B1 On some problems of the arithmetical theory of continued fractions . . . .	131
B2 On some problems of the arithmetical theory of continued fractions II . . .	149
B3 On two conjectures of P. Chowla and S. Chowla concerning continued fractions . . . . .	161

<b>C. Algebraic number theory</b>	167
Commentary on C: Algebraic numbers by <i>David W. Boyd and D. J. Lewis</i> . . . . .	169
C1 A refinement of two theorems of Kronecker with <i>H. Zassenhaus</i> . . . . .	175
C2 On a theorem of Bauer and some of its applications . . . . .	179
C3 An extension of the theorem of Bauer and polynomials of certain special types with <i>D. J. Lewis and H. Zassenhaus</i> . . . . .	190
C4 On sums of roots of unity. (Solution of two problems of R. M. Robinson) . . . . .	197
C5 On a theorem of Bauer and some of its applications II . . . . .	210
C6 On the product of the conjugates outside the unit circle of an algebraic number . . . . .	221
C7 On linear dependence of roots . . . . .	238
C8 On Sylow 2-subgroups of $K_2 O_F$ for quadratic number fields $F$ with <i>J. Browkin</i> . . . . .	253
C9 A class of algebraic numbers . . . . .	264
C10 On values of the Mahler measure in a quadratic field (solution of a problem of Dixon and Dubickas) . . . . .	272
 <b>D. Polynomials in one variable</b>	 281
Commentary on D: Polynomials in one variable by <i>Michael Filaseta</i> . . . . .	283
D1 Solution d'un problème de K. Zarankiewicz sur les suites de puissances consécutives de nombres irrationnels . . . . .	295
D2 On the reducibility of polynomials and in particular of trinomials . . . . .	301
D3 Reducibility of polynomials and covering systems of congruences . . . . .	333
D4 Reducibility of lacunary polynomials I . . . . .	344
D5 Reducibility of lacunary polynomials II . . . . .	381
D6 A note on the paper "Reducibility of lacunary polynomials I" with <i>J. Wójcik</i> . . . . .	403
D7 Reducibility of lacunary polynomials III . . . . .	409
D8 Reducibility of lacunary polynomials IV . . . . .	447
D9 On the number of terms of a power of a polynomial . . . . .	450
D10 On reducible trinomials . . . . .	466
D11 On a conjecture of Posner and Rumsey with <i>K. Győry</i> . . . . .	549
D12 Reducibility of lacunary polynomials XII . . . . .	563
D13 On reducible trinomials II . . . . .	580
D14 On reducible trinomials III . . . . .	605
D15 On the greatest common divisor of two univariate polynomials I . . . . .	632
D16 On the greatest common divisor of two univariate polynomials II . . . . .	646
D17 On the reduced length of a polynomial with real coefficients . . . . .	658

<b>E.</b>	<b>Polynomials in several variables</b>	693
	Commentary on E: Polynomials in several variables <i>by Umberto Zannier</i> . . . . .	695
E1	Some unsolved problems on polynomials . . . . .	703
E2	Reducibility of polynomials in several variables . . . . .	709
E3	Reducibility of polynomials of the form $f(x) - g(y)$ . . . . .	715
E4	Reducibility of quadrimomials <i>with M. Fried</i> . . . . .	720
E5	A general irreducibility criterion . . . . .	739
E6	Some arithmetic properties of polynomials in several variables <i>with H. L. Montgomery</i> . . . . .	747
E7	On difference polynomials and hereditarily irreducible polynomials <i>with L. A. Rubel and H. Tverberg</i> . . . . .	755
E8	On a decomposition of polynomials in several variables . . . . .	760
E9	On weak automorphs of binary forms over an arbitrary field . . . . .	779
E10	Reducibility of symmetric polynomials . . . . .	828
<b>F.</b>	<b>Hilbert's Irreducibility Theorem</b>	835
	Commentary on F: Hilbert's Irreducibility Theorem <i>by Umberto Zannier</i> . . . . .	837
F1	On Hilbert's Irreducibility Theorem . . . . .	839
F2	A class of polynomials . . . . .	846
F3	The least admissible value of the parameter in Hilbert's Irreducibility Theorem <i>with Umberto Zannier</i> . . . . .	849