LMS NEWSLETTER

DATES OF SOCIETY MEETINGS

1982

Friday, 18 June 1982, Burlington House (P. J. Cameron and R. Bieri).

Friday, 15 October 1982, Burlington House (B. Bollobás and J. F. C. Kingman).

Friday, 19 November 1982, Burlington House (K. D. Elworthy and Presidential Address).

1983

Friday, 21 January, Burlington House.

Friday, 18 February, Burlington House.

Friday, 18 March, Burlington House.

Friday, 20 May–Saturday, 21 May. Two-day meeting at Sussex (Differential Equations).

Friday, 17 June, Burlington House.

R. A. BAILEY

VISIT OF PROFESSOR BIERI

Professor Dr. R. Bieri (Frankfurt) will be visiting this country to address the Society's ordinary meeting on 18 June. During his stay here he will also address the Oxford Algebra Seminar, on 16 June at 5 p.m. It is hoped that he will visit UMIST on or after 21 June.

R. A. BAILEY

ROYAL SOCIETY

The following were among those elected fellows of the Royal Society in March 1982: R. J. Baxter (theoretical physics, Australia); M. V. Berry (theoretical physics, Bristol); C. A. R. Hoare (computation, Oxford); G. S. Rushbrooke (theoretical physics, Newcastle); G. B. Segal (pure mathematics, Oxford).

KILLAM PRIZE FOR W. T. TUTTE

Professor W. T. Tutte, a life member of LMS, was recently awarded the Izaak Walton Killam Memorial Prize for 1982. The prize of $50,000 is awarded by the Canada Council in recognition of an outstanding career contribution to one of the fields of natural sciences, medicine, or engineering.

IS THEIR MONEY SAFE?

Worldwide Computer Services, Inc., 1581 Route 23, Wayne, New Jersey 07470, USA, has announced a prize of $25,000 for the first published proof of the twin prime conjecture (there are infinitely many pairs of rational integers differing by 2, both of which are primes). Certain conditions are specified in the announcement of the prize. For example, the published proof must be in English, it must appear in one of a number of journals specified by the donor, and a copy of the journal containing the proof must be delivered by certified mail to WCS (address above). The prize is to be awarded one year after the date of publication, if during that time the proof has not been refuted. The offer expires 31 March 1985. The prize is to be divided if more than one valid proof is produced during the time period in question and all the conditions mentioned are satisfied in each case. Readers interested in a more detailed specification of the conditions are urged to correspond with the firm offering the prize. Inquiries should be addressed to Eugene Primoff, vice-president, Worldwide Computer Services, Inc., at the address given above.

MATHEMATICS IN POLAND

1. As reported briefly in the May *Newsletter*, the ICM planned for August 1982 in Warsaw has been postponed. The Executive Committee of the International Mathematical Union will decide in November 1982 whether to reconfirm or cancel the Congress. No alternative site will be considered. This procedure has been accepted by the Polish organising committee. The General Assembly (business meeting) of the IMU will take place in August 1982 as planned, and the names of the recipients of the Fields medals will be announced then.

2. The Polish Mathematical Society, which had been suspended, has been reinstated, with the same Officers as before its suspension.

3. There follows a list of mathematicians (university teachers of mathematics, or equivalent) who are known to have been interned or imprisoned. At the end of April a number of internees were released, among them many intellectuals (in the terminology of the popular press), but it is not yet known whether this number included some of those on the list.

Janusz Onyskiewicz, logician, Warsaw University.

Ryszard Rubinstein, topologist, Mathematical Institute, Polish Academy.

Marian Srebrny, logician, Mathematical Institute, Polish Academy.

Andrez Zarach, set theorist, Wroclaw.

Miroslaw Michalik, mathematical economist, Lodz.

Jan Waskiewicz, logician, Wroclaw.

Jerzy Geresz, catastrophe theory.

4. At the same time as the release of some internees, several of the Martial Law restrictions were lifted, including some of those relating to travel. It remains to be seen whether this will make it easier for Polish mathematicians to attend conferences abroad. It has been reported that, prior to the lifting of restrictions, almost all the mathematicians who had applied for permission to attend a conference had been refused.

N. L. BIGGS

RECENT DEVELOPMENTS IN MATHEMATICAL ECONOMICS

A conference on Recent Developments in Mathematical Economics, financed in part by the LMS, will be held at the University of Essex from 31 August to 3 September 1982. It is expected that there will be about 40 European and American participants from the fields of Mathematics and Mathematical Economics.

The conference is a successor to two earlier successful meetings, the 1975 "Warwick Recontre" between Economists and Mathematicians, and the 1981 Essex conference on "Mathematical Economics and Public Policy". The intention is to examine recent developments in mathematical economics and in the application of mathematical techniques in economics, and to exchange ideas about directions which may prove fruitful for further research.

Amongst the topics which may be discussed are the following. Repeated games, games with incomplete information and expectation formation, including rational expectations. The testing of economic models and the ability to discriminate between true and false models: self-reinforcing errors in perceptions. Chaotic dynamics and its implications for economic modelling and econometric testing. The microfoundations of macroeconomic theory, and the theory of fixed price equilibria. The theory of oligopoly and of imperfect competition. Problems associated with non-convexities and with discrete choices.

Although these six topics are listed separately, there are substantial interconnections between them. For example, results from the fields of games with incomplete information and of repeated games may have implications for the modelling of imperfect competition. Prior expectations may influence the testing of models. Non-convexities may give rise to imperfect competition, and to equilibria with rationing. It is hoped that discussion will clarify and develop these connections.

The intention is thus to select topics of current interest, where there appears to be scope for further work involving some degree of mathematical sophistication in conceptualising and analysing problems, and with important overlaps and interactions between the topics covered. Speakers from Economics will be asked to emphasise questions relating to the selection of mathematical techniques appropriate to their topics, and mathematicians to comment on the issues thus raised, and to give reviews of developments in relevant areas.

Further details may be obtained by writing to Professor G. Heal, Dept. of Economics, University of Essex, Wivenhoe Park, Colchester CO4 3SQ.

HUNGARIAN TOPOLOGY CONFERENCE

The Bolyai János Mathematical Society intends to organise a Colloquium on Topology in the period 15–19 August 1983 at Eger, Hungary. The aim of the Colloquium is to provide ground for the exchange of information on new achievements and on the recent problems of Topology and its applications to other fields in mathematics. Further details may be obtained from J. Gerlits, Bolyai János Mathematical Society, 1061 Budapest, Anker köz 1–3. I.111, Hungary.

FUNCTION THEORY OPEN DAY

A one-day meeting on Function Theory will be held at the Open University, Milton Keynes on Monday, 27 September 1982 (10.30 a.m. to 5 p.m.). The Organising Committee consists of D. A. Brannan, J. G. Clunie, W. K. Hayman. There will be invited talks and some shorter volunteered talks. For further information please write to Professor D. A. Brannan or Professor J. G. Clunie, Faculty of Mathematics, The Open University, Walton Hall, Milton Keynes MK7 6AA.

PROFESSOR J. L. MASSERA

As reported in the May *Newsletter*, the Council of the Society has agreed to support the International Campaign on behalf of Professor Massera. The following is an extract from the Bulletin of the Campaign, dated January 1982. Further details may be obtained from: International Campaign-Massera, 39 Elm Ridge Drive, Toronto, Ontario, Canada, M6B 1A2.

When the military junta seized power in Uruguay there was a wave of arrests with torture for political opponents. Professor Jose Luis Massera, who had been a leading Member of Parliament, was seized in 1975 and savagely beaten. He has been in prison since then. One leg is shorter than the other as a result of torture which fractured a hip. He is now 66 years of age.

Professor Massera is the leading mathematician in Uruguay, respected internationally for his research in differential equations. He is the author of 43 published mathematical works. In addition, he developed single-handedly the school of modern mathematicians in Uruguay. He holds several honorary degrees and he has now offers of professorships in France, Italy and the USA.

The National Academy of Sciences (Washington, USA) sent a delegation to Uruguay, and several senior members of L'Academie des Sciences (Paris, France) have gone to Uruguay on his behalf. Amnesty International adopted Massera as a prisoner of conscience and the Human Rights Committee of the United Nations confirmed that the human rights of Professor Massera, as defined by the International Covenant of Civil and Political Rights, had been violated.

Under pressure of world-wide public opinion, the Uruguayan authorities have announced, from time to time, that Massera would have a trial, open to observers. But no such trial has been held. In private discussions Uruguayan officials have said that they fear that their public image would be damaged by Massera if he were released, and so they mean to keep him in prison until he dies.

We believe that the Uruguayan authorities would decide that it would be better for them to let Massera go, if *public criticism became sufficiently strong.* The objective of this campaign is to arouse such public criticism.

GRAPH THEORY—SINGAPORE

The First Southeast Asian Colloquium on Graph Theory will be held on the campus of the National University of Singapore from 24 May 1983 to 12 June 1983. The Colloquium will consist of two parts: *Part* 1: A two-week workshop from 24 May to 5 June 1983; *Part* 2: General Conference from 7 June to 12 June 1983.

For further information, please write to H. P. Yap, Department of Mathematics, National University of Singapore, Kent Ridge, Singapore 0511, Republic of Singapore.

POLISH APPEAL: UN-NEEDED BACK-NUMBERS

This is to note that the fund set up three months ago to help buy mathematics books for Polish mathematical centres is making, albeit slow, but good progress and a first package of books has now been despatched. Members are still fervently requested to send contributions to the undersigned at the London School of Economics (payable to "Polish Mathematical Book Fund"). An alternative form of help could be to donate un-needed back issues of LMS journals. The following have been requested from Warsaw (Math. Inst. and, separately, University) as follows.

Journal LMS: (First series) **1** (1926) No. 1, **16** (1941) No. 61, **18** (1943) No. 70, **21** (1946) Nos. 81–84, **25** (1950) No. 97, **26** (1951) No. 101, **27** (1952) to end.

(Second series) volumes **2**–**14**, **20** (Nos. 1, 2), **21** (Nos. 2, 3), **22** (Nos. 2, 3), **23**, **24** (Nos. 2, 3).

(Repeated desiderata) **3** (No. 3), **19** (Nos. 2, 4), **22** (Nos. 2, 4).

Proceedings LMS: All issues from Series 3 onwards.

Bulletin LMS: volumes **1**–**8**.

A. Ostaszewski

BNCM AND ALL THAT

The recent uncertainty about the ICM has highlighted the fact that many British mathematicians are unclear about the organisation of mathematics at national and international level. These notes may help to clarify the position.

At the top of the tree is the International Council for Scientific Unions (ICSU). This has about twenty member unions, each one dealing with a particular scientific area. One such member union is the International Mathematical Union (IMU), which organises the four-yearly International Congress of Mathematicians (ICM). The United Kingdom is affiliated to all the member unions of the ICSU through the Royal Society, which is known as the adhering body. The Royal Society maintains a British National Committee for each subject, including one for Mathematics (BNCM). The LMS and some other societies nominate members of the BNCM, and at the present time the LMS nominees are D. E. Edmunds (1982–87), J. F. C. Kingman (1978–83), and J. H. Williamson (1979–84). The

BNCM is responsible for formulating a national response to all matters controlled by the IMU, including nominations for Fields medals and suggestions for speakers at the ICM.

Each branch of the tree has an offshoot devoted to educational matters. The ICSU has a Committee for the Teaching of Science (CTS). The IMU has a Commission for Mathematical Instruction (ICMI) which organises the four-yearly International Congress on Mathematical Education (ICME). The Royal Society maintains a group of joint committees with professional institutes concerned with educational matters. In the case of mathematics, the joint committee is with the Institute of Mathematics and its Applications (IMA). The Royal Society/IMA committee is responsible for national participation in the affairs of the ICMI. Here again, the LMS and other societies have nominees on the committee; at the present time the LMS nominee is T. J. Willmore (1980–82).

N. L. Biggs

JOURNALS FOR SALE

Dr. S. M. Rudolfer, Dept. of Mathematics, The University, Manchester M13 9PL, has the following journals for sale. All enquiries should be addressed to him.

Maths Reviews **43** (1–7), **44** (1–7), **45** (1–5), **46** (1, 2, 5–7), **47** (1–7), **48** (1–7);

Bull. LMS **1**, 1 (1969)–**7**, 3 (1975); *Journal LMS* **41**, 1 (1966)–**44**, 4 (1969); *ibid* 2nd series **1**, 1 (1969)–**5**, 4 (1972); *Notices AMS* **20**, 1 (1973)–**28**, 5 (1981); *Bull. AMS* **79**, 1 (1973)–**84**, 6 (1978); *ibid* New Series **1**, 1 (1979)–**5**, 1 (1981).

BOOKS RECEIVED FOR REVIEW IN THE *BULLETIN*

Complimentary copies of the books listed below have been received from their publishers by the Society. Those for which the *Bulletin* is unable to publish a review will be lodged in the Society's Library at University College, London, where they are available for inspection and use by members.

C. T. H. Baker, C. Phillips (ed.): The numerical solution of nonlinear problems, pp 369, £16·00 (Oxford University Press).

F. Thomasset: Implementation of finite element methods for Navier-Stokes equations, pp 161, DM 72, US $33·60 (Springer-Verlag).

D. L. Book (ed.): Finite-difference techniques for vectorized fluid dynamics calculations, pp 226, DM 72, US $33·60 (Springer-Verlag).

R. D. Richtmyer: Principles of advanced mathematical physics, pp 322, DM 72, US $33·60 (Springer-Verlag).

S. Mills: The collected letters of Colin Maclaurin, pp 496, £15·00 (Shiva Publishing Ltd., Cheshire).

N. Prakash: Differential geometry: an integrated approach, pp 414, US $7·60 (Tata McGraw-Hill Pub. Co. Ltd., India).

C. P. Rourke, B. J. Sanderson: Introduction to piecewise-linear topology, pp 123, DM 24, US $11·20 (Springer-Verlag).

J. T. Cannon, S. Dostrovosky: The evolution of dynamics—vibration theory from 1687 to 1742, pp 195, DM 98, US $41·70 (Studies in the History of Mathematics and Physical Sciences 6) (Springer-Verlag).

P. J. Hilton, G. S. Young: New directions in applied mathematics, pp 163, DM 53, US $24·10 (Springer-Verlag).

M. Suzuki: Group theory 1, pp 434, DM 118, US $55·00 (Springer-Verlag).

H. W. Ursprung: Die elementare katastrophentheorie: eine darstellung aus der sicht der okonomie, pp 332, DM 46, US $21·50 (Springer-Verlag).

F. Mainardi (ed.): Wave preparation in viscoelastic media, pp 272, £10·75 (Research Notes in Mathematics, 52) (Pitman Books).

H. Hiller: Geometry of Coxeter groups, pp 213, £9·50 (Research Notes in Mathematics, 54) (Pitman Books).

A. J. Berrick: An approach to algebraic K-theory, pp 108, £7·25 (Research Notes in Mathematics, 56) (Pitman Books).

J-P Aubin, R. B. Vinter (eds): Convex analysis and optimization, pp 210 (Research Notes in Mathematics, 57) (Pitman Books).

A. Blanc-Lapierre (ed.): Study week on mankind and energy: needs, resources, hopes, pp 719 (Pontificae Academie, Italy).

C. Faith: Injective modules and injective quotient rings, pp 120, SFr 58 (Lecture Notes in Pure & Applied Mathematics, 72) (Marcel Dekker Inc.).

K. Jorgens: Linear integral operators, pp 379, £28·50/£12·95 (Surveys & Ref. Works in Mathematics, 7) (Pitman Books).

J. Fresnel, M. van der Put: Geometrie analytique rigide et applications, pp 215, SFr 30 (Progress in Mathematics, 18) (Birkhauser-Verlag).

J. P. Aubin, A. Bensoucsan, I. Ekeland (eds): Mathematical techniques of optimization, control and decision, pp 212, SFr 54 (Birkhauser-Verlag).

D. K. Arrowsmith, C. M. Place: Ordinary differential equations, pp 252, £18·00 (Chapman & Hall).

S. French: Sequencing and scheduling, pp 245, £18·50/£7·50 (John Wiley).

M. Knebusch, M. Kolster: Witt rings, pp 96, DM 28 (Friedr. Vieweg & Sohn).

W. W. Comfort, S. Negrepontis: Chain conditions in topology, pp 299, £22·50 (Cambridge Tracts in Mathematics, 79) (Cambridge University Press).

D. P. Telionis: Unsteady viscous flows, pp 408, DM 83, US $38·70 (Springer-Verlag).

E. H. Spanier: Algebraic topology, pp 528, DM 69, US $32·20 (Springer-Verlag).

R. S. Millman, G. D. Parker: Geometry: A metric approach with models, pp 355, DM 78, US $36·30 (Undergraduate Texts in Mathematics) (Springer-Verlag).

S.-T. Yau (ed.): Seminar on differential geometry, pp 706, £38·80/£10·60 (Princeton University Press).

J. R. Hanna: Fourier series and integrals of boundary value problems, pp 271, £23·65 (John Wiley).

S. H. Saperstone: Semidynamical systems in infinite dimensional spaces, pp 474, DM 68, US $31·70 (Springer-Verlag).

S. Iitaka: Algebraic geometry, an introduction to birational geometry of algebraic varieties, pp 357, DM 69, US $32·20 (Graduate Texts in Mathematics, 76) (Springer-Verlag).

E. Hecke: Lectures on the theory of algebraic numbers, pp 239, DM 79, US $36·00 (Graduate Texts in Mathematics, 77) (Springer-Verlag).

L. V. Ahlfors, F. W. Gehring (eds): Oswald Teichmuller—Gesammelte Abhandlungen—Collected papers, pp 751, DM 96, US $44·70 (Springer-Verlag).

Geometry and analysis—papers dedicated to the memory of V. K. Patodi (Tata Institute Studies in Mathematics), pp 166, DM 28, US $13·10 (Springer-Verlag).

D. G. Medley: An introduction to mechanics and modelling, pp 340, £7·50 (Heinemann Educational Books Ltd., London).

M. Nermuth: Information structures in economics, pp 236, DM 34, US $15·90 (Lecture Notes in Economics, 196) (Springer-Verlag).

D. M. Hawkins: Topics in applied multivariate analysis, pp 362, £12·50 (Cambridge University Press).

P. Schultz, C. E. Praeger, R. P. Sullivan: Algebraic structures and applications, pp 168, SFr 89 (Lecture Notes in Pure & Applied Mathematics, 74) (Marcel Dekker Inc.).

J. R. Giles: Convex analysis with applications in differentiation of convex functions, pp 278, £9·95 (Research Notes in Mathematics, 58) (Pitman Books).

K. Donner: Extension of positive operators and Korovkin theorems, pp 181, DM 21·50, US $10 (Lecture Notes in Mathematics, 904) (Springer-Verlag).

J. P. Hennart: Numerical analysis, Proceedings, Mexico, 1981, pp 247, DM 29, US $13·50 (Lecture Notes in Mathematics, 909) (Springer-Verlag).

S. S. Abhyankar: Weighted expansions for canonical desingularization, pp 236, DM 25, US $11·70 (Lecture Notes in Mathematics, 910) (Springer-Verlag).

C. M. Elliott, J. R. Ockendon: Weak and variational methods for moving boundary problems, 213, £12·00 (Research Notes in Mathematics, 59) (Pitman Books).

I. Gohberg (ed.): Toeplitz centennial, pp 588, SFr 92, DM 108 (Operator Theory 4) (Birkhauser-Verlag).

R. von Randow (ed.): Integer programming and related areas, A classified bibliography 1978–81, pp 388, DM 52, US $24·20 (Lecture Notes in Economics and Mathematical Systems, 197) (Springer-Verlag).

G. B. Wetheril: Elementary statistic methods, pp 356, 3rd edition (Chapman & Hall).

J. W. Brewer, M. K. Smith (eds): Emmy Noether: A tribute to her life and work, pp 208, SFr 45 (Marcel Dekker Inc.).

J. E. White: The methods of iterated tangents with applications in local Riemannian geometry, pp 247, £28·50 (Pitman Books).

L.-K. Hua: Starting with the unit circle—Background to higher analysis, pp 179, DM 69, US $32·20 (Springer-Verlag).

R. K. Guy: Unsolved problems in number theory, Vol. 1, pp 161, DM 42, US $19·60 (Springer-Verlag).

P. Walters: An introduction to ergodic theory, pp 250, DM 69·59, US $32·40 (Graduate Texts in Mathematics, 79) (Springer-Verlag).

J. van Geel: Places and valuations in noncommutative ring theory, pp 126, SFr 58 (Lecture Notes in Pure & Applied Mathematics, 71) (Marcel Dekker Inc.).

L. J. Corwin, R. H. Szczarba: Multivariable calculus, pp 544, SFr 145 (Marcel Dekker Inc.).

K. Clancey, I. Gohberg: Factorization of matrix functions and singular integral operators, pp 234, SFr 32 (Birkhauser-Verlag).

B. Felsager: Geometry particles and fields, pp 636, DanKr 110 (Odense University Press, Denmark).

M. K. Holmes, L. A. Rubenfeld: Mathematical modelling of the hearing process, Proceedings, Troy 1980, pp 104, DM 19·50, US $9·10 (Springer-Verlag).

A. C. M. van Rooij, W. K. Schikhof: A second course on real functions, pp 200, £15·00 (Cambridge University Press).

I. Drooyan, B. Rosen: Introductory algebra—A guided worktext, pp 410, £12·75 (John Wiley).

A. Fiacco: Mathematical programming with data perturbations, pp 237, SFr 98 (Lecture Notes in Pure & Applied Mathematics, 73) (Marcel Dekker Inc.).

D. Bleecker: Gauge theory and variational principles, pp 180, US $17·50 (Addison-Wesley, Mass., USA).

M. J. Greenburg, J. R. Harper: Algebraic topology—A first course, pp 311, US $31·50/ US $19·50 (Benjamin/Cummings Inc., Mass., USA).

M. Field: Several complex variables and complex manifolds I, pp 198, £10·00 (LMS Lecture Note Series 65) (Cambridge University Press).

M. Field: Several complex variables and complex manifolds II, pp 211, £11·00 (LMS Lecture Note Series 66) (Cambridge University Press).

New in Number Theory

R.K.Guy

Unsolved Problems in Number Theory

1981. 17 figures. XVIII, 161 pages. (Problem Books in Mathematics,
Volume 1). Cloth DM 42,–; approx. US $ 18.70
ISBN 3-540-90593-6

Contents: Introduction: Some General References. –
Notation. – Prime Numbers. – Divisibility. – Additive
Number Theory. – Some Diophantine Equations. –
Sequence of Integers. – None of the Above. – Index of
Authors Cited. – General Index.

E.Hecke

Lectures on the Theory of Algebraic Numbers

Translated from the German by G.U.Brauer and
J.R.Goldman with the assistance of R.Kotzen

1981. XII, 239 pages. (Graduate Texts in Mathematics, Volume 77)
Cloth DM 79,–; approx. US $ 35.10. ISBN 3-540-90595-2

Contents: Elements of Rational Number Theory. –
Abelian Groups. – Abelian Groups in Rational Number
Theory. – Algebra of Number Fields. – General Arith-
metic of Algebraic Number Fields. – Introduction of
Transcendental Methods into the Arithmetic of Number
Fields. – The Quadratic Number Field. – The Law of
Quadratic Reciprocity in Arbitrary Number Fields. –
Chronological Table. – References.

L.-K.Hua

Introduction to Number Theory

Translated by P.Shiu

1982. 14 figures. Approx. 530 pages. Cloth DM 96,–; approx. US $ 42.70
ISBN 3-540-10818-1

This is the English edition of the well-known Chinese
original first published in 1957. Apart from giving a broad
introduction to number theory and some of its fundamen-
tall principles the author emphasises the close relationship
between number theory and mathemtics as a whole.
Various recent results in number theory are presented in
such a form as to make this a text book suitable for
teaching purposes.

From the reviews of the chinese edition:
"This is a valuable and important textbook on number
theory, somewhat on the lines of Hardy and Wright [An
introduction to the theory of numbers, Oxford, 1954...]
but going far beyond it in scope. The text is very clear...
The book contains many recent results, useful tables, e.g.,
of quadratic fields, and problems for the student..."
Mathematical Reviews

L.-K.Hua, Y.Wang

Applications of Number Theory to Numerical Analysis

1981. IX, 241 pages. Cloth DM 78,–; approx. US $ 34.70
ISBN 3-540-10382-1. Distribution rights for The People's Republic of
China: Science Press, Beijing

Contents: Algebraic Number Fields and Rational Appro-
ximation. – Recurrence Relations and Rational Approxi-
mation. – Uniform Distribution. – Estimation of Discre-
pancy. – Uniform Distribution and Numerical Integration.
– Periodic Functions. – Numerical Integration of Periodic
Functions. – Numerical Error for Quadrature Formula. –
Interpolation. – Approximate Solution of Integral Equa-
tions and Differential Equations. – Appendix: Tables.
Bibliography.

K.Ireland, M.Rosen

A Classical Introduction to Modern Number Theory

1982. 1 figure. Approx. 350 pages. (Graduate Texts in Mathematics,
Volume 84). Cloth DM 72,–; approx. US $ 32.00. ISBN 3-540-90625-8

Contents: Unique Factorization. – Applications of Unique
Factorization. – Congruence. – The Structure of
U ($\mathbb{Z}/n\mathbb{Z}$). – Quadratic Reciprocity. – Quadratic Gauss
Sums. – Finite Fields. – Gauss and Jacobi Sums. – Cubic
and Biquadratic Reciprocity. – Equations over Finite
Fields. – The Zeta Function. – Algebraic Number Theory.
– Quadratic and Cyclotomic Fields. – The Stickelberger
Relation and the Eisenstein Reciprocity Law. – Bernoulli
Numbers. – Dirichlet L-functions. – Diophantine Equa-
tions. – Elliptic Curves. – First Bibliography. – Second
Bibliography.

D.S.Kubert, S.Lang

Modular Units

1981. XIII, 358 pages. (Grundlehren der mathematischen Wissen-
schaften, Band 244). Cloth DM 98,–; approx. US $ 43.60
ISBN 3-540-90517-0

Contents: Introduction. – Distributions on Toroidal
Groups. – Modular Units. – Quadratic Relations. – The
Siegel Units Are Generators. – The Cuspidal Divisor Class
Group on X (N). – The Cuspidal Divisor Class Group on
X_1 (N). – Modular Units on Tate Curves. – Diophantine
Applications. – Unramified Units. – More Units in the
Modular Function Field. – Siegel-Robert Units in Arbi-
trary Class Field. – Klein Cenits in Arbitrary Class Fields.
– Computation of a Unit Index. – Appendix: The Loga-
rithm of the Siegel Functions. – Bibliography. – Index.

L.C.Washington

Introduction to Cyclotomic Fields

1982. Approx. 435 pages. (Graduate Texts in Mathematics, Volume 83)
Cloth DM 96,–; approx. US $ 42.70. ISBN 3-540-90622-3

Contents: Fermat's Last Theorem. – Basic Results. –
Dirichlet Characters. – Dirichlet L-series and Class
Number Formulas. – P-adic L-functions and Bernoulli
Numbers. – Stickelberger's Theorem. – Iwasawa's
Construction of P-adic L-functions. – Cyclotomic Units. –
The Second Case of Fermat's Last Theorem. – Galois
Groups Acting on Ideal Class Groups. – Cyclotomic Fields
of Class Number One. – Measures and Distributions. –
Iwasawa's Theory of $\mathbb{Z}_p$-extensions. – The Kronecker-
Weber Theorem. – Appendix. – Tables. – Bibliography. –
Index.

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