

*CODEN IJMTAW*  
*VOLUME 32*  
*NUMBER 3*

*PAGES 315-591*  
*FALL 1988*  
*ISSUE 128*

*ILLINOIS*  
*JOURNAL*  
*OF*  
*MATHEMATICS*

.....

*a quarterly journal published by the*

UNIVERSITY OF ILLINOIS  
AT URBANA-CHAMPAIGN

.....

*edited by*

GERALD J. JANUSZ  
WILLIAM B. JOHNSON  
ROBERT KAUFMAN  
FRANK B. KNIGHT  
A. J. MACINTYRE  
DAVID MASSER  
PHILIPPE TONDEUR

# ILLINOIS JOURNAL OF MATHEMATICS

## Manuscript

Original research papers in pure and applied mathematics intended for publication in this journal may be written in English, French or German. They should be addressed to the Illinois Journal of Mathematics, 1409 West Green Street, University of Illinois at Urbana-Champaign, Urbana, Illinois 61801, or one of the editors:

GERALD J. JANUSZ (Managing Editor), University of Illinois, Department of Mathematics, 273 Altgeld Hall, 1409 West Green St., Urbana, Illinois 61801.

WILLIAM B. JOHNSON, Texas A & M University, Department of Mathematics, College Station, Texas 77843.

ROBERT KAUFMAN, University of Illinois, Department of Mathematics, 273 Altgeld Hall, 1409 West Green St., Urbana, Illinois 61801.

FRANK B. KNIGHT, University of Illinois, Department of Mathematics, 273 Altgeld Hall, 1409 West Green St., Urbana, Illinois 61801.

A. J. MACINTYRE, University of Oxford, Mathematical Institute, 24-29 St. Giles, Oxford, England OX1 3LB.

DAVID MASSER, The University of Michigan, Department of Mathematics, 3220 Angell Hall, Ann Arbor, Michigan 48109-1003.

PHILIPPE TONDEUR, University of Illinois, Department of Mathematics, 273 Altgeld Hall, 1409 West Green St., Urbana, Illinois 61801.

All papers should be typewritten, double-spaced, and the author should keep a complete copy. Bibliography and footnotes should be typed, double-spaced, on separate sheets of paper. Figures should be drawn separately in black ink on white paper suitable for being photographed. Explain unusual symbols and handwritten symbols, and identify special typefaces such as bold, Gothic (German), script.

### Proof

Authors will receive only galley proof. Proof sent to North American addresses will be accompanied by manuscript and sent by first class mail. To other addresses, proof will be sent by airmail, and manuscript will be sent only if requested. Authors are asked to return proof (and manuscript if sent) by the same class of mail that was used in sending it to them.

### Page charges

To cover a part of the cost of production, the author's institution will be billed for \$40 per page.

### Offprints

One hundred free offprints are supplied to the sole author of a paper; fifty free offprints are supplied to each author of a joint paper. Additional offprints may be purchased.

---

THE ILLINOIS JOURNAL OF MATHEMATICS (ISSN 0019-2082) is published quarterly (Spring, Summer, Fall, Winter) by the University of Illinois Press, 54 E. Gregory Dr., Champaign, IL 61820, on behalf of the Department of Mathematics of the University of Illinois. Second-class postage paid at Champaign, Illinois and additional mailing offices. *Postmaster:* Please send change-of-address notices to University of Illinois Press, 54 E. Gregory Drive, Champaign, Illinois 61820.

Subscription price: \$70.00; single issues, \$18.00 (volumes 29 to date). Address orders to the University of Illinois Press. Back issues of Volumes 1-28 are available from Swets & Zeitlinger B.V., Herreweg 347-b, P.O. Box 810, 2160 SZ Lisse-Holland.

Fall 1988

Volume 32, Number 3

---

---

A special issue of the

*ILLINOIS JOURNAL OF MATHEMATICS*

in memory of

IRVING REINER

1924–1986

---

---

*Papers on  
Algebra and Representation Theory*

*edited by*

Gerald J. Janusz, Leon McCulloh, and Stephen V. Ullom

---

---



IRVING REINER