

THE JOURNAL  
*of*  
THE AUSTRALIAN MATHEMATICAL  
SOCIETY

VOLUME VIII - PART 4

NOVEMBER 1968

M. J. O'CARROLL and P. E. LUSH	<i>The convergence of Rayleigh-Ritz approxi- mations . . . . .</i>	641
E. R. SURYANARAYAN	<i>Generalized intrinsic form of the characteristic relations in the steady supersonic flow of a gas . . . . .</i>	647
VLASTIMIL DLAB	<i>Distinguished submodules . . . . .</i>	661
E. SENETA	<i>On asymptotic properties of subcritical bran- ching processes . . . . .</i>	671
D. J. DALEY	<i>The serial correlation coefficients of waiting times in a stationary single server queue . . . . .</i>	683
J. PELHAM THOMAS	<i>Maximal connected topologies . . . . .</i>	700
C. PEARCE	<i>On a many server queue with non-recurrent input and negative exponential servers . . . . .</i>	706
PHILLIP GOOD	<i>The limiting behavior of transient birth and death processes conditioned on survival . . . . .</i>	716
T. P. SPEED	<i>On rings of sets. . . . .</i>	723
T. P. SPEED	<i>A note on commutative semigroups . . . . .</i>	731
N. J. DE MESTRE	<i>Non-linear weak shock diffraction . . . . .</i>	737
K. D. MAGILL JR. and J. A. GLASENAPP	<i>0-dimensional compactifications and Boolean rings . . . . .</i>	755
	<i>Index to Volume VIII . . . . .</i>	766

---

*Published for*  
THE AUSTRALIAN MATHEMATICAL SOCIETY  
*by Wolters-Noordhoff NV - Groningen - The Netherlands*

## THE AUSTRALIAN MATHEMATICAL SOCIETY

<i>President:</i>	C. S. DAVIS	University of Queensland
<i>Treasurer:</i>	V. G. HART	University of Queensland
<i>Secretary:</i>	W. PYE	Secondary Teachers' College, Victoria
<i>Business Manager:</i>	E. T. STELLER	University of Queensland
<i>Membership subscriptions:</i>	Institutions:	\$ 50
	Other members:	\$ 12 (which may be reduced to \$ 5 for undergraduates and junior graduates)

Members of the Society receive copies of the Journal free.

*Reciprocity agreements:* Such agreements have been made with a number of other mathematical societies. Under the agreements members of the other societies who are not normally resident in Australia may join the Australian Mathematical Society at half the current rates. Such members receive copies of the Journal free.

*Correspondence:* All subscriptions and correspondence connected with accounts should be addressed to the Treasurer; all other correspondence connected with the Journal, except that concerned with the publication of papers, should be sent to the Business Manager. The address in both cases is:

The Australian Mathematical Society,  
Department of Mathematics,  
University of Queensland,  
St. Lucia, Queensland, 4067, Australia.

Applications for membership and other correspondence should be sent to the Secretary, Australian Mathematical Society, Secondary Teachers' College, Swanston St., Parkville, Victoria 3053, Australia.

### THE JOURNAL

Manuscripts (two copies) for publication should be sent either to the editor or to the appropriate associate editor at the address given in the list below. Manuscripts should be typewritten on good quality quarto sized white paper, the typing should be double spaced, on one side of the paper only, and there should be wide (at least  $1\frac{1}{2}$  inches) margins all round. Authors are asked to read the section "Preparation of Manuscripts" on the inside back cover.

Correspondence concerning the printing of papers after their acceptance for publication should be addressed to the assistant editor, M. A. B. Deakin, Department of Mathematics, Monash University, Clayton, Victoria 3168.

Authors receive 50 free offprints of their papers; additional offprints may be ordered at cost. Excessive costs incurred by the Society through corrections to or the withdrawal of articles may be charged to the authors concerned.

Each volume of the Journal consists of four parts. The price is \$ 15.

#### Editor

G. B. Preston, Department of Mathematics, Monash University, Clayton, Victoria 3168.

#### Associate Editors

E. S. BARNES,  
Department of Mathematics,  
University of Adelaide,  
Adelaide, South Australia 5001.

P. D. FINCH  
Department of Mathematics,  
Monash University,  
Clayton, Victoria 3168.

C. A. HURST,  
Department of  
Mathematical Physics,  
University of Adelaide,  
Adelaide,  
South Australia 5001.

J. B. MILLER,  
Department of Mathematics,  
Monash University,  
Clayton, Victoria 3168.

A. F. PILLOW,  
Department of Mathematics,  
University of Queensland,  
St. Lucia, Queensland 4067.

T. G. ROOM,  
Department of Mathematics  
(Pure Mathematics),  
University of Sydney,  
Sydney, N.S.W. 2006.

E. STRZELECKI,  
Department of Mathematics,  
Monash University,  
Clayton, Victoria 3168.

G. E. WALL,  
Department of Mathematics  
(Pure Mathematics),  
University of Sydney,  
Sydney, N.S.W. 2006.

K. C. WESTFOLD,  
Faculty of Science,  
Monash University,  
Clayton, Victoria 3168.