

Glasgow Mathematical Journal

CONTENTS

| | |
|---|-----|
| Michael J. Kallaher , Semi-field-like affine planes | 113 |
| David Colton , A reflection principle for solutions to the Helmholtz equation and an application to the inverse scattering problem | 125 |
| Bruce A. Barnes , Representations of the l^1 -algebra of an inverse semigroup having the separation property | 131 |
| Elyahu Katz , Topological groups with co-monoid structures | 145 |
| Bruce C. Berndt and S. Chowla , The reckoning of certain quartic and octic Gauss sums | 153 |
| Johnny A. Johnson , A note on regular local Noether lattices II | 157 |
| Lu-San Chen , A Lyapunov inequality and forced oscillations in general nonlinear n th order differential-difference equations | 161 |
| N. K. Dickson , Conjugacy in groups with dihedral 3-normalisers | 167 |
| D. C. Stocks , On a dual integral equation with a trigonometric kernel | 175 |
| Yik-Hoi Au-Yeung and Fuk-Yum Sing , A remark on the generalized numerical range of a normal matrix | 179 |
| Carl Eberhart and Wiley Williams , Congruences on an orthodox semigroup via the minimum inverse semigroup congruence | 181 |
| Koo-Guan Choo , Grothendieck groups of twisted free associative algebras | 193 |
| M. J. Crabb and P. G. Spain , Commutators and normal operators | 197 |
| Bridget Bos Baird , Embedding inverse semigroups of homeomorphisms on closed subsets | 199 |

SCOTTISH ACADEMIC PRESS LIMITED

33 MONTGOMERY STREET

EDINBURGH EH7 5JX

GLASGOW MATHEMATICAL JOURNAL

The *Glasgow Mathematical Journal* is a continuation of the *Proceedings of the Glasgow Mathematical Association*, founded in 1952 by the late Professor T. M. MacRobert. It is published with the support of the University Court of the University of Glasgow. The *Glasgow Mathematical Journal* is published in Parts twice yearly, in January and July; two Parts complete a Volume of approximately 200 pages.

The prepaid subscription for each Volume is £6.50 in U.K., \$15.00 in U.S.A., post free. Single parts may be supplied at a cost of £3.50 in U.K., \$8.00 in U.S.A., net.

Copies may be ordered direct from the publishers or from any bookseller.

Information for Contributors

While the *Glasgow Mathematical Journal* is intended primarily for Pure Mathematics, papers on Applied Mathematics will also be accepted. Manuscripts from all parts of the world will be welcomed and given careful consideration.

Manuscripts, preferably typed, should be prepared so as to conform with the practice in current numbers of the *Journal*, especially with regard to line illustrations, references, tables and summaries. The name of the author and the date of the receipt of the manuscript will be printed under the title. Text figures must be suitable for line block reproduction, lettered in pencil, numbered, and separated from the text but allocated clearly to sections of the text.

References should be placed at the end of the paper, arranged and numbered in alphabetical order. In the text, reference numbers should be enclosed in square brackets and underlined, to distinguish them from formula numbers, which should be quoted in round brackets. The following particulars should be given, in the order indicated:

for references to books—*author, title, edition, place of publication, year of publication, page reference*;

for references to articles in periodicals—*author, title of article, short title of periodical, series no. (if any), volume no., year, pagination*.

A proof is supplied once in galley form, together with an Order Form for offprints. Offprints are supplied free to the number of twenty-five; additional copies, if ordered prior to publication, will be supplied, at cost, at the request of the contributor. Excessive corrections may be charged to the author.

Manuscripts should be sent to:

THE EDITORS

GLASGOW MATHEMATICAL JOURNAL

DEPARTMENT OF MATHEMATICS

UNIVERSITY OF GLASGOW, GLASGOW G12 8QW