



The Mathematical Gazette



A musical mathematics teacher

Volume 107
Number 569
July 2023

MATHEMATICAL ASSOCIATION



Supporting mathematics in education

THE MATHEMATICAL ASSOCIATION

THE MATHEMATICAL ASSOCIATION

AN ASSOCIATION OF TEACHERS AND STUDENTS
OF ELEMENTARY MATHEMATICS

I hold every man a debtor to his profession, from the which as men of course do seek to receive countenance and profit, so ought they of duty to endeavour themselves by way of amends to be a help and an ornament thereunto.'
BACON

THE COUNCIL

PRESIDENT	CHAIR OF COUNCIL
Dr Nira Chamberlain, OBE	Dr Ems Lord
IMMEDIATE PAST PRESIDENT	SECRETARY
Dr Colin Foster	Dr Paul Harris
PRESIDENT DESIGNATE	TREASURER
(Vacant)	Mr Sudeep Gokarakonda

REPRESENTATIVES OF COMMITTEES

BRANCHES	Mrs Cindy Hamill	(Chair)
CONFERENCES	Dr Andy Kemp	(Chair)
MEMBERSHIP	Mrs Jemma Sherwood	(Chair)
PROFESSIONAL DEVELOPMENT	Mrs Louise Pennington	(Chair)
PUBLICITY & MEDIA	(Vacant)	(Chair)
PUBLICATIONS	Mrs Jill Trinder	(Chair)
TEACHING COMMITTEE	Mr David Miles	(Chair)

EDITOR IN CHIEF Mr Ed Southall

MEMBERS	Miss Stella Dudzic	Dr Chris Pritchard
WITHOUT	Mrs Charlotte Hawthorne	Mr Bill Richardson
OFFICE	Mrs Jo Morgan	Mrs Manina Tyler-Mort
	Miss Cherri Moseley	

EXECUTIVE OFFICER Ms Sandi Atkinson

EDITORIAL COMMITTEE OF THE MATHEMATICAL GAZETTE

<i>Editor</i>	Dr Gerry Leversha
<i>Production Editor</i>	Mr Bill Richardson
<i>Reviews Editor</i>	Mr Owen Toller
<i>Problems Editors</i>	Mr Nick Lord, Ms Tuya Sa
<i>Assistant Editors</i>	Mr Tom Roper, Mr Colin Davis, Mr Michael Fox, Mr Graham Howlett, Professor Adam McBride