



The Scottish Mathematical Council

www.scot-maths.co.uk

MATHEMATICAL CHALLENGE 2024–2025

Entries must be the unaided efforts of individual pupils.

Solutions must include explanations and answers without explanation will be given no credit.

Do not feel that you must hand in answers to all the questions.

CURRENT AND RECENT SPONSORS OF MATHEMATICAL CHALLENGE ARE

The Edinburgh Mathematical Society, The Maxwell Foundation,

The London Mathematical Society and The Scottish International Education Trust.

The Scottish Mathematical Council is indebted to the above for their generous support and gratefully acknowledges financial and other assistance from schools, universities and education authorities.

Particular thanks are due to the Universities of Aberdeen, Edinburgh Napier, Moray House, St Andrews, Stirling, Strathclyde and to George Heriot's School, Gryffe High School and Kelvinside Academy.

Primary Division: Problems I

- P1.1.** James and Mia play a two-person game in which the winner gains 2 points and the loser loses 1 point. Yesterday James won exactly 4 games and Mia had a final score of 6 points.
What was James' final score?
- P1.2.** Over coffee the other day my friend MacAngus and I were mulling over the passing of time. 'Four years ago', MacAngus said, 'I was four times as old as young Callum and now I'm only three times as old.'
'If you go on like that' I said, 'you'll soon both be the same age.'
When we finished laughing over this fallacy, it occurred to me that from what MacAngus said it would be possible to figure out his age. How old is my friend MacAngus?
- P1.3.** Four explorers wish to get one of their number as far as possible into the wilderness from their base. Each explorer can carry supplies for up to 10 days. At any time supplies can be transferred between explorers and individual explorers can return to base, provided they have sufficient supplies for the return journey. Supplies cannot be left unattended in the wilderness.
What is the greatest number of days the lead explorer can travel from the base so that all return safely?

END OF PROBLEM SET I

CLOSING DATE FOR RECEIPT OF SOLUTIONS :

27 September 2024

Look out for Problems II in October!

Look on the MC web site: www.scot-maths.co.uk for information about Mathematical Challenge.

There are archives of previous questions on: www.wpr3.co.uk/MC-archive/P/index-P.html

Here is a shortcut for your smartphone or tablet





Mathematical Challenge Problems I

PRIMARY DIVISION

2024-2025

PLEASE USE CAPITALS TO COMPLETE

SURNAME

OTHER NAME(S)
(underline the one
you prefer)

SCHOOL

AGE

YEAR OF STUDY

FOR OFFICIAL USE

Marker

Marks

| 1 | 2 | 3 | Total |
|---|---|---|-------|
| | | | |

— — — — - **CUT ALONG HERE** — — — —

Please write your solutions on A4 paper and staple the above form to them.

PLEASE WRITE YOUR NAME ON EVERY PAGE.

Send your entry through your school to the organiser of the section.

For further information on the competition, please see the School Materials which have been distributed to schools. A copy of these Materials can be obtained from

<http://www.wpr3.co.uk/MC/materials/index.html>

There are separate links for primary and secondary schools. This page also includes a list of authorities in each section and names and addresses of section organisers.
