

# The Scottish Mathematical Council

www.scot-maths.co.uk

## MATHEMATICAL CHALLENGE 2023–2024

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 II

**P2.1** Three ladies and three gentlemen are seated alternately at a round table.

1. Miss Adams is two places to the left of Mrs Stewart, and is not the graphic designer.
2. Mrs Stewart is not sitting opposite to Mr Stewart, but the accountant is facing the web-designer.
3. Mr McGregor has the graphic designer on his right.
4. The banker is on the left of Mr Greenwell our local artist, and opposite the doctor.
5. Miss Brodie and the web-designer have their heads close together over some sketches.

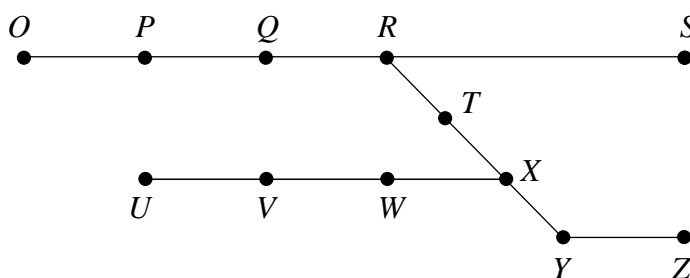
Who is sitting opposite Mrs Stewart?

**P2.2** Louise and her dog share the same birthday, but are different ages. When Louise's aunt asked how old her dog was, Louise replied as follows:

'Next birthday she will be half of my age but on my birthday two years ago she was one third of my age.'

How old is Louise now and how old is her dog now?

**P2.3**



The diagram shows a map of Callum's local rail network, where the dots represent stations and the lines are routes. Callum wants to visit all the stations, travelling only by train, starting at any station and ending at any station, with no restriction on which routes are taken.

What is the smallest number of stations he must visit more than once?

### END OF PROBLEM SET II

CLOSING DATE FOR RECEIPT OF SOLUTIONS :

24 November 2023

Look out for Problems III in January!

Look on the SMC web site: [www.scot-maths.co.uk](http://www.scot-maths.co.uk) for information about Mathematical Challenge.



# Mathematical Challenge Problems II

PRIMARY DIVISION

2023-2024

**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.

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