

The Scottish Mathematical Council

www.scot-maths.co.uk

MATHEMATICAL CHALLENGE 2025–2026

Golden Jubilee Year

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 and Gryffe High School.

Primary Division: Problems 3

P1. Leo noticed that $49 = 4 + 9 + 4 \times 9$, i.e. it has the property that the sum of the digits added to the product of the digits gives the number itself. Which two-digit numbers have this property?

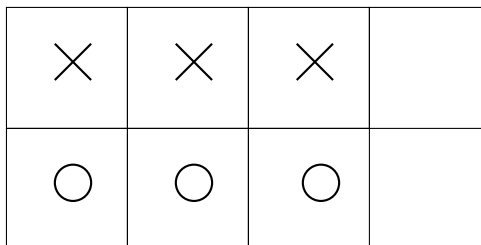
P2. “How many guests are there, Ruth?” asked Maggie, who was busy in the kitchen when the guests arrived for afternoon tea.

“Well Mum,” replied Ruth, who had her wits about her, “it's like this, I reckon. Half of them take no sugar, a quarter of them no milk, a third of them take milk and sugar, and two of them neither milk nor sugar.”

Use Ruth's rather cryptic reply to figure out how many guests there are.

P3. The aim in this game is to swap the noughts and crosses in the smallest number of moves. Noughts and Crosses take turns moving one piece. A move can be up, down, sideways or diagonally one square as long as that square is empty.

How can this be achieved in the smallest number of moves?



END OF PROBLEM SET 3

CLOSING DATE FOR RECEIPT OF SOLUTIONS :

6 February 2026



SMC

Mathematical Challenge Problems 3

PRIMARY DIVISION 2025-2026

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 section organiser.

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.

For information about Mathematical Challenge, look on the MC web site:

www.scot-maths.co.uk

MATHS CHALLENGES ARCHIVES

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

