



The Scottish Mathematical Council

www.scot-maths.co.uk

MATHEMATICAL CHALLENGE 2021–2022

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, Glasgow, St Andrews, Stirling, Strathclyde and to George Heriot's School, Gryffe High School and Kelvinside Academy.

Primary Division: Problems I

P1.1. In one of the 'Scotland's Got Talent' shows, every member of the audience, which numbered 5219, was allowed to vote for one of the acts performing. In this show, four acts performed, and the voting, which was exceptionally close, showed the winner had 22, 30 and 73 more votes than the other three acts.

How many votes did each act receive?

P1.2. Forest Rovers, Southside United, Hilltown Thistle and Valley Wanderers were to play each other at football. After some of the matches had been played, a table showing some details of matches played, won, lost, drawn etc looked like this:

	Played	Won	Lost	Drawn	Goals for	Goals against	Points
Forest Rovers	2			1	0		
Southside United							0
Hilltown Thistle	1						
Valley Wanderers			0	0	4	2	6

3 points are given for a win and 1 for a draw. Complete the table and find the score in each match played, explaining how you worked it out.

P1.3. In the diagram (not to scale) the rectangle is divided into nine smaller rectangles. The areas of five of the smaller rectangles are given. Determine the area of the rectangle labelled R .

5		2
	4	R
3	2	

END OF PROBLEM SET I

CLOSING DATE FOR RECEIPT OF SOLUTIONS :

8 October 2021

Look out for Problems II in October!

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



Mathematical Challenge Problems I

PRIMARY DIVISION

2021-2022

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.
