MATHEMATICAL CHALLENGE 2019–2020

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, Professor L E Fraenkel,
The London Mathematical Society and The Scottish International Education Trust.

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

Primary Division: Problems II

P2.1. In a recent by-election the original numbers were lost but the live news broadcast at the time reported:

“Jones and Brown together polled 65% of the total number of votes; Jones and Robinson together accounted for 15355 votes and Brown polled 8245.”

There were no other candidates.

Which of the three candidates had the most votes? Explain why.

P2.2. Eighteen years ago Ivan was three times as old as his son but he is only twice as old now. How old is Ivan?

P2.3. Six dice are placed on a table as shown.

Each die is of the standard type with 1 opposite 6, 2 opposite 5 and 3 opposite 4.

What is the minimum sum of all the 21 visible faces of the dice in the stack?
(The invisible faces are those between the dice and the faces on the table.)

END OF PROBLEM SET II

CLOSING DATE FOR RECEIPT OF SOLUTIONS : 29 November 2019

Look out for Problems III in January 2020!

Look on the SMC web site: www.scot-maths.co.uk for information about Mathematical Challenge and for loads of practice items why not visit the MC archive?

www.wpr3.co.uk/MC-archive/index
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

C U T A L O N G H E R E

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.