

The Scottish Mathematical Council

MATHEMATICAL CHALLENGE 2009–2010

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, Professor L E Fraenkel,

The London Mathematical Society and The Scottish International Education Trust.

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Primary Division: Problems II

- P2.1.** The digits 1, 2, 3, 4, 5 and 6 can be placed in the spaces shown below to create a correct calculation. Can you find it?

$$\begin{array}{r}
 \square \quad \square \\
 \times \quad \square \\
 \hline
 \square \quad \square \quad \square \\
 \hline
 \hline
 \end{array}$$

Explain how you reached your answer.

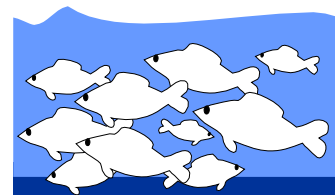
- P2.2.** Example:

The (2 + 3)th	Square number is	25
	Triangular number is	15
	Cube number is	125

Using each of the digits 1 to 9 exactly once, fill the boxes below to obtain a true statement

The ($\square + \square$)th	Square number is	$\square \square$
	Triangular number is	$\square \square$
	Cube number is	$\square \square \square$

- P2.3.** Under the sea in the land of Swimmington there was a school of mermaids, octopuses and seahorses. Assuming that the tentacles on an octopus can also be called arms, the group had 16 tails, 50 arms and 40 eyes. How many of each are in the group?



END OF PROBLEM SET II