The Scottish Mathematical Council

MATHEMATICAL CHALLENGE 2006–2007

Entries must be the unaided efforts of individual pupils. Solutions must include explanations.

Answers without explanation will be given no credit.

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.

Primary Division: Problems I

**P1.1.**   When the seven dwarfs waved goodbye to Snow White they walked home in single file.   Happy was as many places in front of Sleepy as Dopey was behind Doc. Sleepy and Grumpy were in even numbered places and Dopey was in an odd numbered place. Sneezy was behind Dopey and Doc was behind Sleepy, but there is no information about Bashful's place. In what order did the dwarfs walk home? **Explain your reasoning.**

P1.2.   During a very hard winter, Liam had only enough hay and corn to feed his six horses for another 30 days and it would be another 75 days before spring would arrive. On the seventh day, before feeding time, Liam sold four of his horses. Will he be able to feed his remaining two horses for the rest of the winter? **Explain your reasoning.**

P1.3.   A dice maker makes mistakes when painting the spots on some dice. Below are three views of one of the dice he makes. How many spots are there on the bottom face in view 1 (i.e. the face opposite the six)? **Explain your reasoning.**
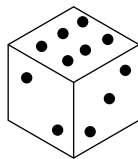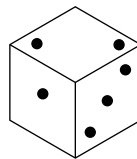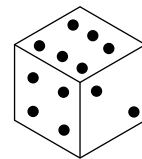
View 1   View 2   View 3

END OF PROBLEM SET I