

OHS Puzzle of the Month

Junior

November 2011

Ann, Beth, Carol, Diane and Ellie are out shopping. They want to buy a special edition DVD to share between them. Ann, Beth and Carol all say "We'll pay our fair share." "But I've only got £2.40 left" says Diane. "Hmm," says Ellie, "That means I'll have to pay a third of the cost. Oh well - let's go for it!" How much is the DVD? [You must explain how you worked this out.]

OHS Puzzle of the Month

Intermediate

November 2011

There is a cheese shortage, and everyone is stocking up. By the time Ann and Belinda get to the shop, there are only 10 pre-packed lumps of cheese left, with weights of 15, 16, 18, 19, 23, 24, 25, 27, 28, 31 and 37 ounces. Between them Ann and Belinda buy up all the remaining cheese, except for one lump which looks a bit mouldy. When they get home, they find that the total weight of Belinda's cheese is exactly twice that of Ann's cheese. What was the weight of the mouldy lump?

[Hint: There is no need for any trial and error here - you do not need to work out who bought which pieces of cheese. But you do need to explain the logic you use to work it out.]

OHS Puzzle of the Month

Senior

November 2011

Three parts to this puzzle:

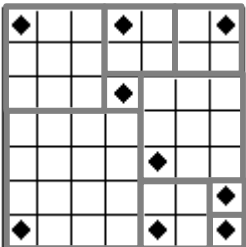
- How many zeros are there at the end of $100!$?
- Explain why there is no number n such that $n!$ ends in 5 zeros.
- List all the numbers z (where $z \leq 30$) such that there is no number $n!$ ending in z zeros.

[Note: You do NOT need to work out $100!$ to answer this. But you do need to explain your answers.]

OHS Puzzle of the Month

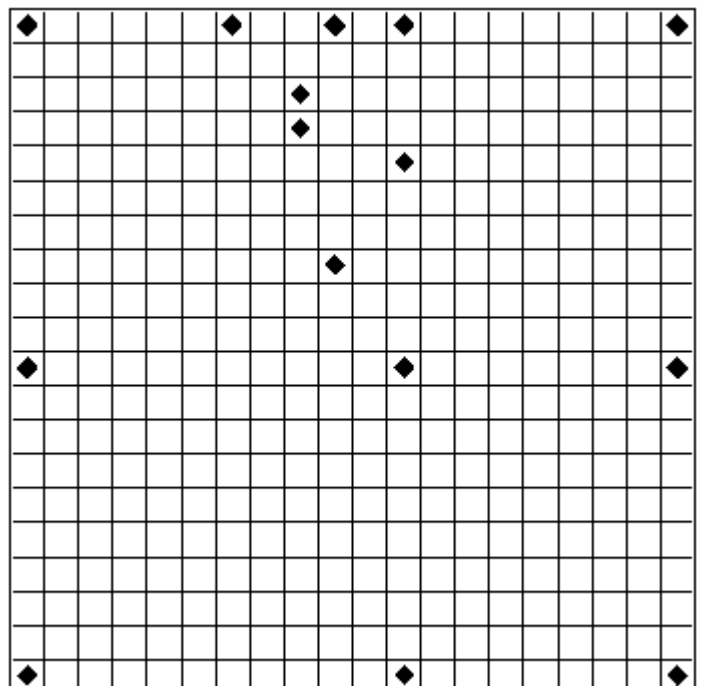
Open

November 2011



The grid on the left has been divided into squares in such a way that each square contains exactly one diamond. Divide up the two grids below in the same way.

Harder



Easier

