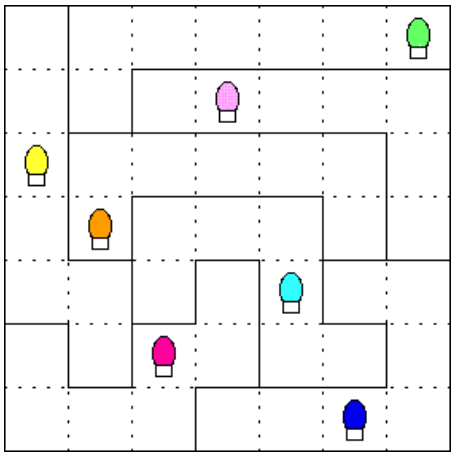
Miscellaneous Christmas Puzzles

Christmas Lights



Alice has seven strings of Christmas lights which she likes to arrange in her window. Each string has seven lights, all of different colours. Last year, she worked out how to arrange them in a 7 by 7 square pattern so that there was one light of each colour in each row and each column.

She drew a diagram to remind herself how she did it, but unfortunately when she got it out this year it had become damp and faded, so she could only make out how the strings had been placed, and a few of the positions of the colours.

Show how Alice can fill in this grid with one light of each colour in each row, each column, and each region of seven squares.

A Christmas Message

M	C	X	M	A	S	S	A
E	T	E	H	Z	H	A	M
R	K	A	R	E	E	R	E
R	I	S	R	E	S	C	R
Y	S	Q	D	I	G	M	R
R	H	E	S	M	Y	E	Y
M	I	S	C	E	T	E	M
X	M	A	S	X	M	A	S

Find a “Knight's Tour” which starts on one of the “M”s in this diagram, and moves from square to square spelling out “MERRY CHRISTMAS”

(A “Knight's Tour” is a series of moves which could be made by a Knight in chess.)

Packing up Decorations

“I can’t sort this out,” sighed Mrs Santa. “I need to pack these 12 boxes of decorations into sets of 3, but they have to done according to the rules.” “What are the rules?” asked a sympathetic reindeer.
“Well, in each box there are four characteristics which might be different – the type of decoration (star, Santa or snowman), the number (1, 2 or 3), the size (large, medium or small) and the shading (clear, hatched or solid). In each set of three that I pack, each characteristic has to be the same for all three, or different for all three. I can’t have two the same and one different.
So I could put the two small solid snowmen, the two medium hatched stars and the two large clear santas into a set, for example. But then I can’t seem to make up the other sets.” Can you help Mrs Santa?