

Lie Algebra Sudoku

A traditional Sudoku puzzle involves a 9×9 grid and the numbers 1 through 9. However, any set of nine symbols can be used. Through happy coincidence, there are nine complex simple Lie algebras: the four series of classical algebras and the five exceptional algebras. Therefore, it is possible to have a Sudoku puzzle using Lie algebras.

Instructions: Fill in the grid with complex simple Lie algebras so that each row and column and each highlighted 3×3 sub-grid contains each of the algebras $A_n, B_n, C_n, D_n, G_2, F_4, E_6, E_7,$ and E_8 without repeats.

—Puzzle by Edward Dunne

Solution on page 1473 (in www.ams.org/notices/201311/rnoti-p1471.pdf).

	E_7		C_n				E_6	
B_n	E_6		E_8	A_n				
		C_n		B_n		E_8	F_4	
		G_2	A_n			E_6		B_n
E_6		A_n			G_2	C_n		
	E_8	D_n		E_6		F_4		
				E_8	C_n		A_n	E_6
	A_n				F_4		E_8	