Puzzle: Sudoku

Puzzles like this are great for developing mathematical logic skills, as well as training us to be resilient if a solution proves tricky to find...!

In the first of these 4 by 4 grids, the numbers 1, 2, 3 and 4 appear just once in each row, each column and each 2 by 2 block (bold outline).

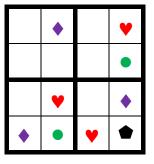
Have a go at completing the missing numbers in the other two grids:

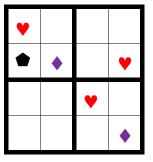
2	1	4	3
3	4	1	2
1	2	3	4
4	3	2	1

1	3	2	
2			3
4		3	1
3	1	4	

4		
2	1	
3		2
	2	

What are the missing shapes in these grids: (one each of \blacklozenge , \heartsuit , \bullet and \blacklozenge)





٠	۲	•	٠
•			
	•		٠
•			

Same rules, but find the missing Roman numerals:

			IV
		Ι	Π
П			

Ι	П	
	Ш	
	I	
11		

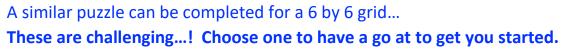
IV		

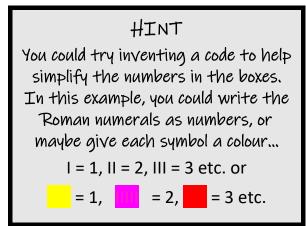
In each row, column, and 2 by 2 block, the decimals add to 1:

	0.3	0.4
	0.2	
		0.3
0.1	0.4	0.2

0.1		2	
0.3	0.2		
0.2			0.4
	0.1	0.3	0.2
	0.3	0.3 0.2 0.2	0.3 0.2 0.2

	0.2	0.1	
0.1	0.3		
	0.1	0.2	
			0.1





			V	II	
				VI	IV
				IV	
	IV	۷	111		
			II		Ι
II					

Each 3 by 2 box, column and row contains numbers 0.2 to 0.6 (or fractions $^{2}/_{10}$ to $^{6}/_{10}$) and a \spadesuit . Each therefore adds to 2.

0.5				0.2	
0.3		٠			
0.4	۲	0.2	0.6	0.5	
			0.4		0.2
0.2					0.5
					0.4

٠	⁵ / ₁₀		² / ₁₀	4/10	
		4/10	٠		
	4/10	³ / ₁₀			² / ₁₀
⁶ / ₁₀		² / ₁₀			
	² / ₁₀			⁶ / ₁₀	
		٠			

Here's a fraction/ decimal challenge or two... As above, all add to 2.

	٠		0.4		³ / ₁₀
³ / ₁₀	¹ / ₅			٠	
	¹ / ₂	٠	0.3	² / ₅	0.2
0.3		0.2		¹ / ₂	٠
		² / ₅	¹ / ₅		0.5
	³ / ₁₀	¹ / ₂	٠	³ / ₅	0.4

			³ / ₅	٠
	0.5	0.2	³ / ₁₀	
³ / ₁₀		² / ₅	٠	
	٠	0.6		
	0.4	³ / ₁₀		

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Finally, similar puzzles can be completed for a 9 by 9 grid! Have a go at completing these...

6	4		9	5				
2	3	8						5
			3					
		2					8	9
			5	3		6	2	
	6	4	8			7	5	
4	2	6	7		5		9	
1	7		2	9	4	5	6	8
	9		6			4	7	

Roman numerals...

VIII		VII	111	II	V		IV	IX
		I			VIII			
		V		IV				
I		IV		VIII	VII	IX	VI	
						IV	VII	
	II	111	IV		VI			
				VI	IX		VIII	IV
		IX		V	IV		11	VII
VI	IV	VIII		111	II		IX	I

Tenths (or their equivalents) $1/_{10}$ to $9/_{10}$.

			0.9	³ / ₅		³ / ₁₀		
¹ / ₂			⁴ / ₅	0.2			0.1	⁹ / ₁₀
					0.3			
			² / ₅				0.3	⁷ / ₁₀
0.9		¹⁴ / ₂₀	0.5	¹ / ₁₀		⁸ / ₁₀	0.6	
0.4	4/5				³ / ₅			
	0.1	40/100		0.9		4/20		
				³ / ₆		0.4	⁸⁰ / ₁₀₀	
				0.4		⁹ / ₁₀		0.6

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