

Cell Blocks

This is a puzzle often to be found in the newspapers, usually of a size which will engage the mind for a few minutes, such as those on the first page of puzzles. However, as they become bigger they do present much more of a challenge; you are invited to explore.

You are presented with a grid, not necessarily square, and the only information that you are given is in the form of numbers in various cells. These numbers always add up to the total number of cells in the puzzle. Each number tells you the size of a rectangle of cells which contains that number, and that number only. Remember, a square is a rectangle, just as a man is an ape!

The aim is to determine all the rectangles, which are not allowed to overlap.

		3		3
5				
		6		
	4			2
		2		

Consider this example puzzle. The odd numbers will usually have rectangles with one side of just one cell, but this is not an absolute rule as for instance a [9] rectangle can be $[3 \times 3]$. The [5] in this example may be either down the first column or across the second row, but if the latter is chosen we see that the top row cannot contain two [3]s. Therefore the [5] is in the first column.

		3		3
		6		
	4			2
		2		

Usually with this puzzle type the answers are presented with the rectangle edges emphasised, but I found that when making new puzzles it was easier for me to see the shapes when coloured in, this being important when a trial puzzle has a number of solutions. So here we have the [5] rectangle filled with green, and we can also fill in the two [3]s – setting the right-hand [3] could have been our first step.

		6		
	4			2
		2		

Now we concentrate on the [4]. This is either $[1 \times 4]$ or $[2 \times 2]$, but there is no place to put a $[2 \times 2]$ without including another given number. Therefore the [4] must be set in the second column.

		6		
				2
		2		

Now there is only one way to set the [6].

				2
		2		

With the [6] set we see that the two [2]s can be filled in, finishing the solution.

		3		3
5				
		6		
	4			2
		2		

The usual presentation of the solution.

Cell Blocks 7×7

			4			
						4
					2	
			9			
6				5		6
			6			
	4			3		

	4					3
			16			
4					4	
						6
	6			4		
			2			

					10	
	4					
			10			
						6
	3			2		
4			3		4	
		3				

3			4	3		
	2			3		
2	2	2				3
				3		
2						6
			7			
	2	5				

				4		
2		6				8
			8			
		6				
	4				6	
			5			

				10		
3						
						10
2				6		
	6					
2			4		6	

	2			4		
					6	
2	4		2			3
		5				
2			2		3	
2						
		12				

				4		
	8					4
			6			
			6			
		6		9		
6						

	5					4
		6				
			5			4
				3		
	9				3	
				4		2
			4			

				3		
		4			3	
	3					4
5			8			
	2	3				4
		6		4		

	5					
		6				2
				6		
4						4
			4		5	
	4			3		
		2				4

	3			4	4	
6		3				
				6		
						5
				5		
		6		4		
						3

Cell Blocks 8×8

							4
2		6			3	2	
2	3	4					4
				3		3	
				4			
2				4		2	
		3				4	
		3	6				

		4					
6						8	
		3			6		
2							2
			12				
3	6						4
				2	6		

	8				6		
			12			4	4
		8					2
8				6			
		6					

						3	
		6			2		
6		4					
							6
	10				12		
			8	3			
							4

							4
2		8			6	2	
2							4
						3	
	5			4			
2						6	
		6			10		

					6		
4				8			
			2			3	
	4						4
			9				
2							6
4							
	4				8		

			5				
	6				4		
				5			4
						3	
4		9			4		
				3			
4			4				6
							3

			5		3		
		4				8	
4				8			
							4
		8					
					6		
						6	
3			5				

		4			3		
				6			
	6				4		
		4			6		
							5
8							
			9			9	

							4
		8			6	2	
6							4
						3	
	5			4			
						6	
		6			10		

		5					
	3			4			4
					3		
6							6
					6		
	6						
4				4		6	
		3			4		

		6					4
		9				8	
				7			
6							4
			6				
						6	
4			4				

Cell Blocks

10 × 10

		2						8	
6				4	2				
			9				3		
	10								
							9	6	
		9							
								4	
	6		4		12				6

	6						4		
			10						
								8	
					6				
	6					7			7
		3			8				
							4		
	4					6			
				4					6
6						5			

		6							
3							8		
			9			3			5
		8			6				
							12		
				10					
	8								
					4				
		6							
3				6					3

		6							6
			4			8			
	6								
	3							9	
4					15				
	2								8
	3						6		
			8				2		
		6				4			

	8					4			
			10						
								8	
				6					
						7			7
		3			8				
							4		
	8					6			
				4					6
6						5			

6							4		
			10						
						6		3	
				6			6		
6									7
		3			8				
							4		
	4					6			
				4					6
6						5			

Cell Blocks

12 × 12

	8				2						
				10			4		6		
			3		6						
		9									
								16			
			4						12		
6											
					16						
	6										4
2							4				
	6						6		8		
4				2							

1

		3	4								
						6				4	
								12			
						25				2	
7									6		
							5				7
	8								8		
			9							3	
						4					
							3				4
4						10		4			
									6		

2

12											
	11										
						10					
								9			
11											8
		9				7					
				2				5			
	10			4							
								8		2	
			8			5					
				7	6					10	

3

	5									6	
				6		8					
8						6		4			
		8									
				3				10			
	2						6				10
					12					4	
5	9								2		
							4				
						6					6
	10								4		

4

Cell Blocks

12 × 12

		4			3				6		
	4	3			2						4
				3				5		2	
		2				5			8		
6					8						
	3			10							5
		2				6					
					4						
	12								8		
		2				5					
				6							
					6				10		

5

								5			
	6			8							
											6
	4		9			6			4	2	
							10				
		4			3					6	
							5				
10					8			4			
			6							6	4
							5				
				8						6	
	6						3				

6

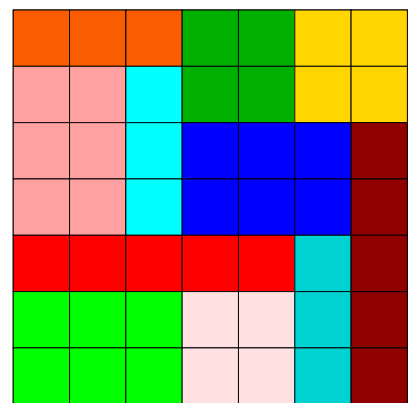
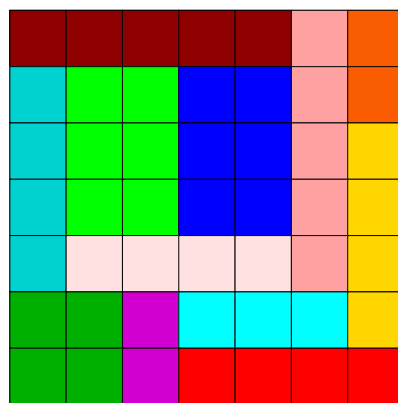
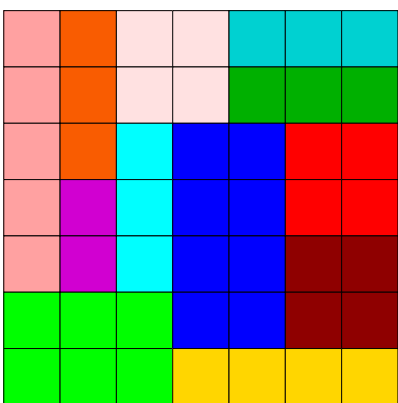
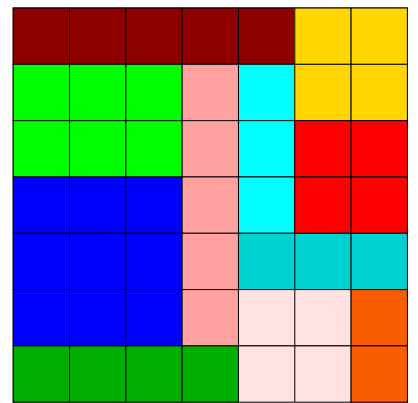
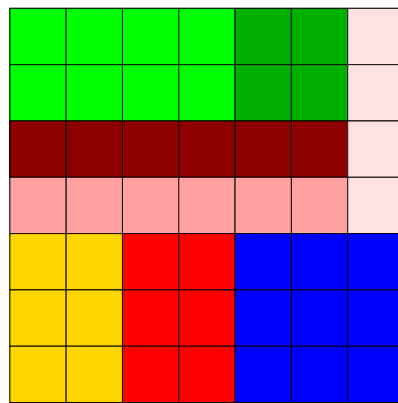
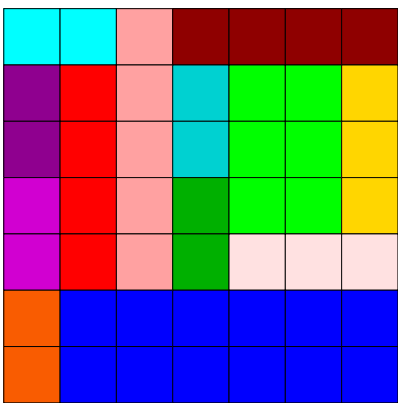
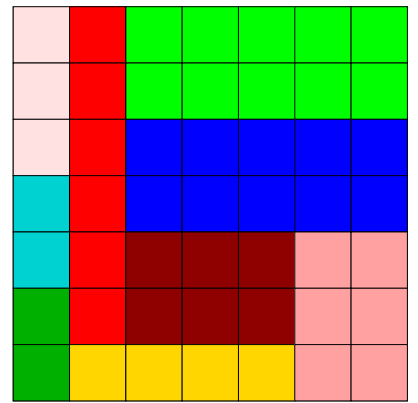
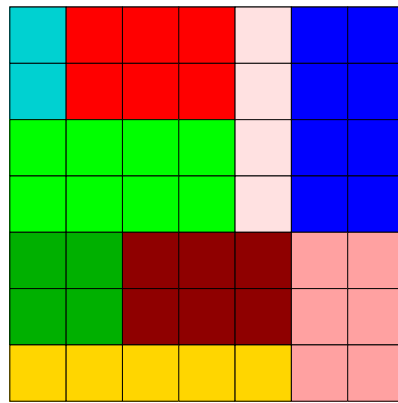
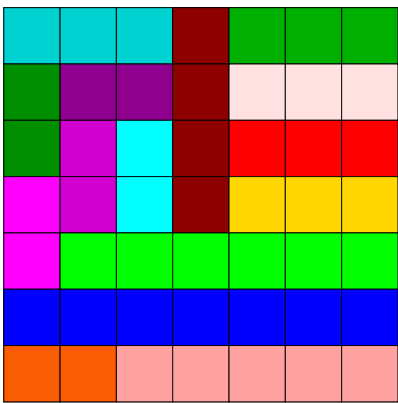
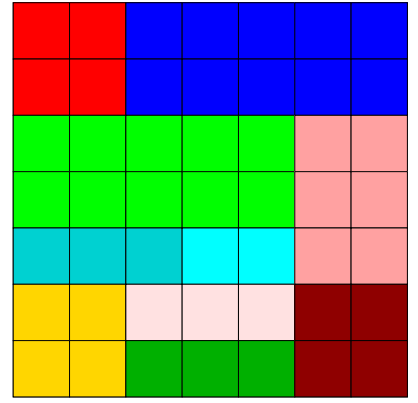
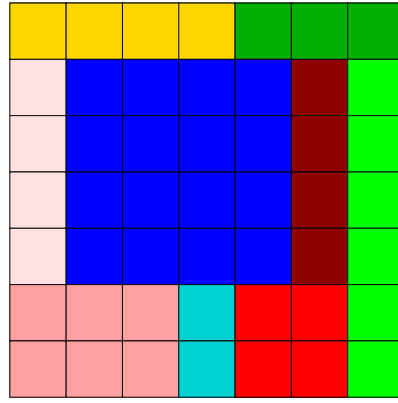
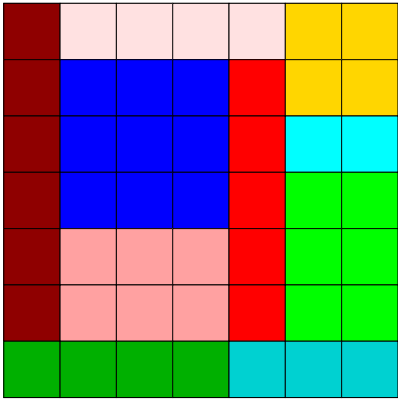
									6		
		8			8						
			6			4					5
								8			
		5					2				
10			4		8						3
									6		
		3	4				8				
					8						4
		6	2					4			
						4					
4				8						6	

7

	4					4				6	
			6								
	2	4							7		
7						6					
			6					5			6
					7					4	
	6						8				
				4				2			
		4				3				8	
6					6				4		
							5	2			
			7						5		

8

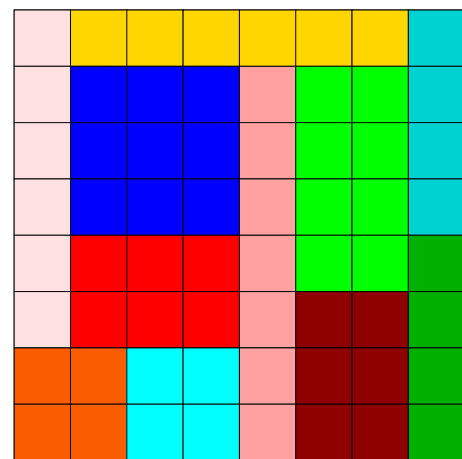
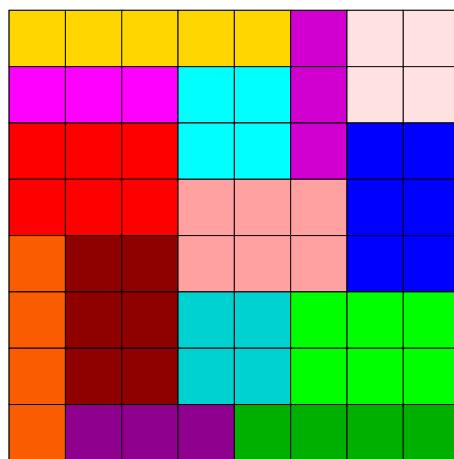
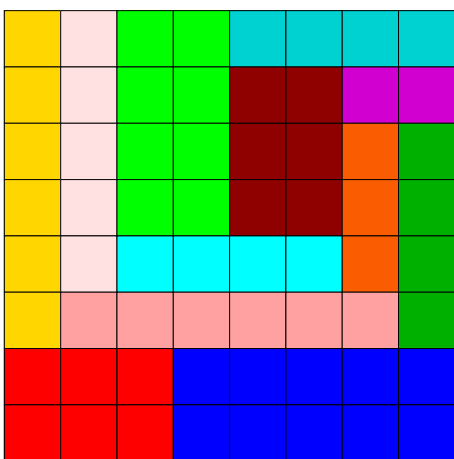
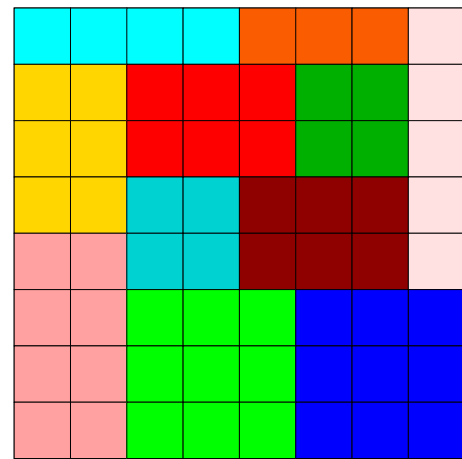
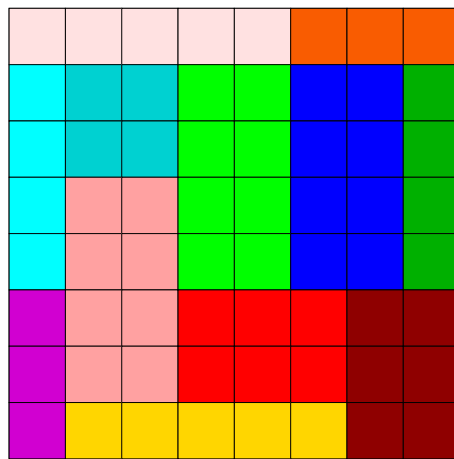
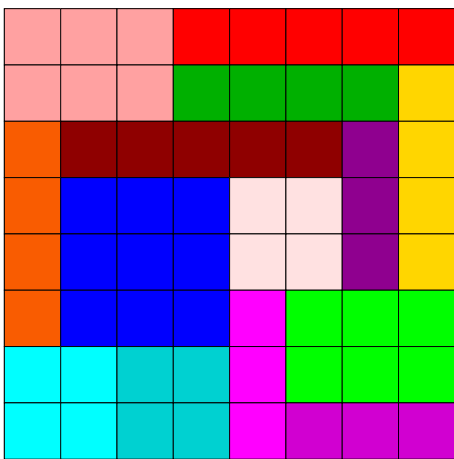
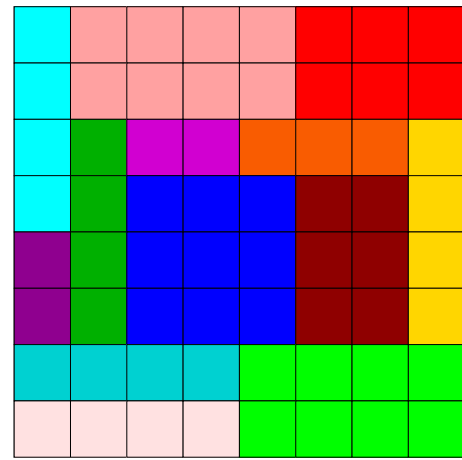
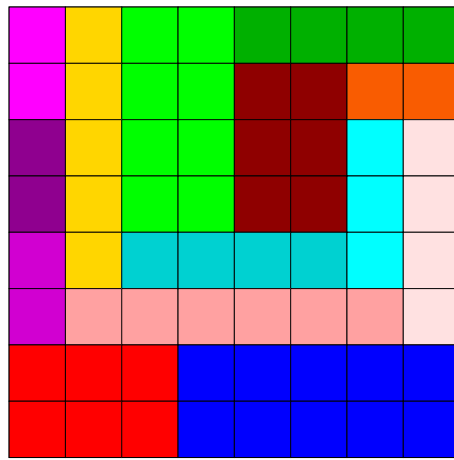
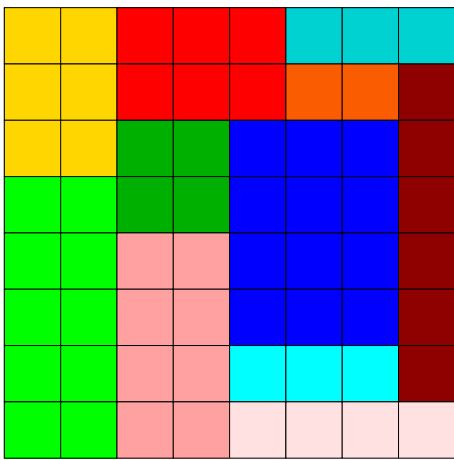
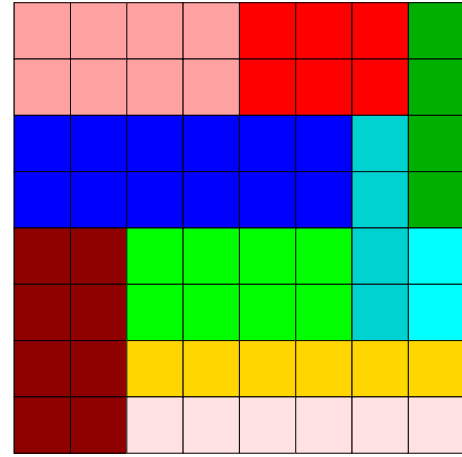
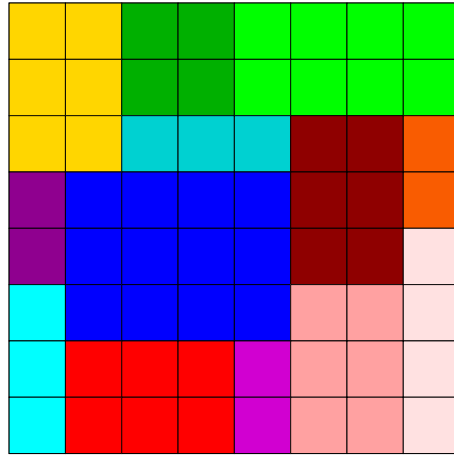
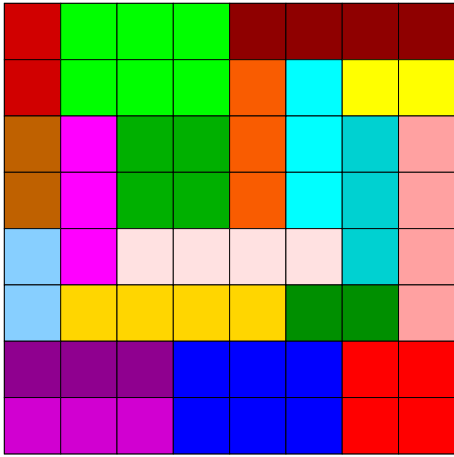
Cell Blocks 7×7 solutions



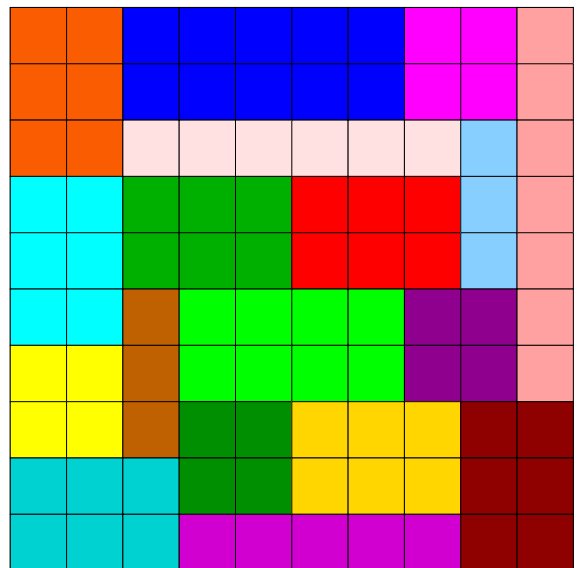
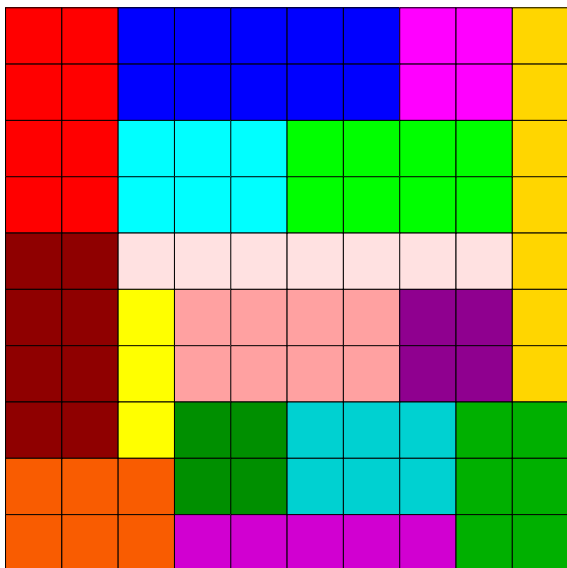
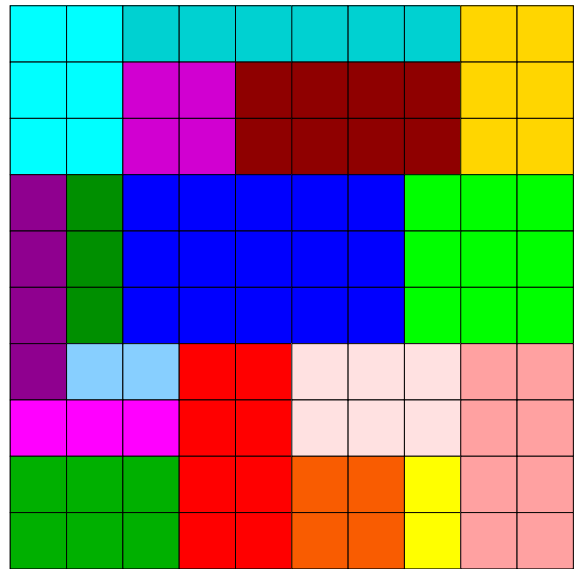
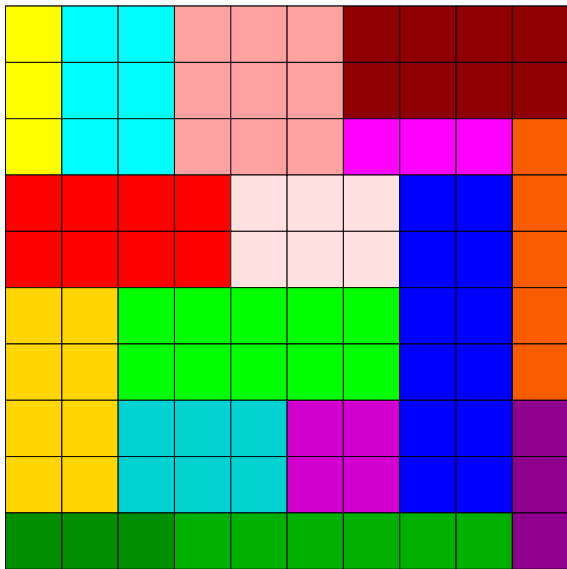
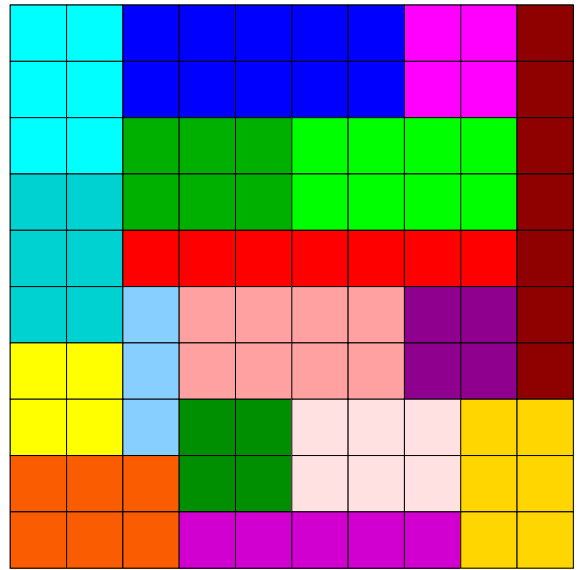
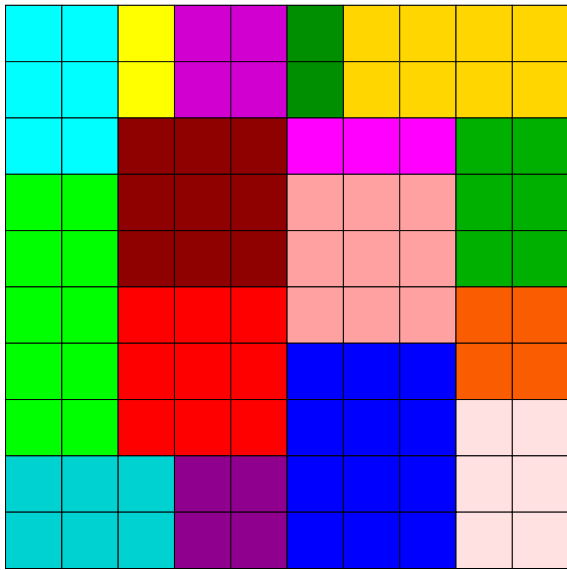
Cell Blocks

8 × 8

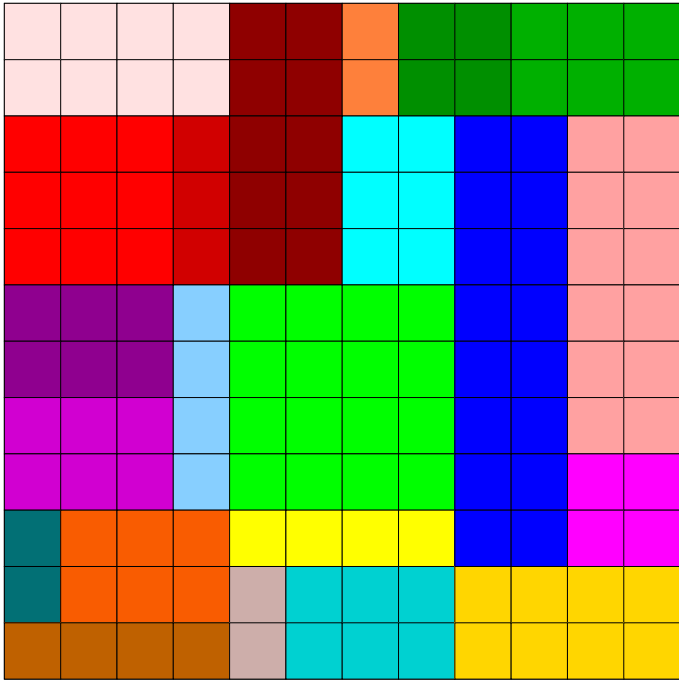
solutions



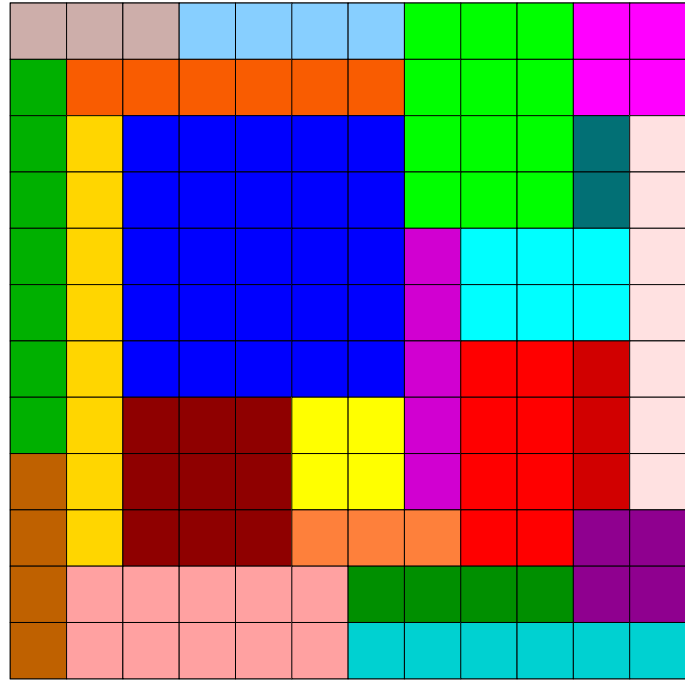
Cell Blocks 10 × 10 solutions



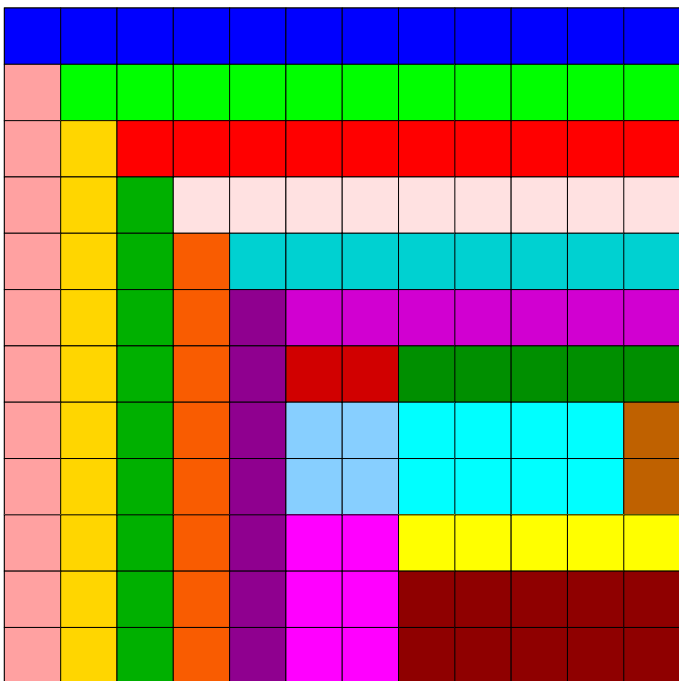
Cell Blocks 12 × 12 solutions



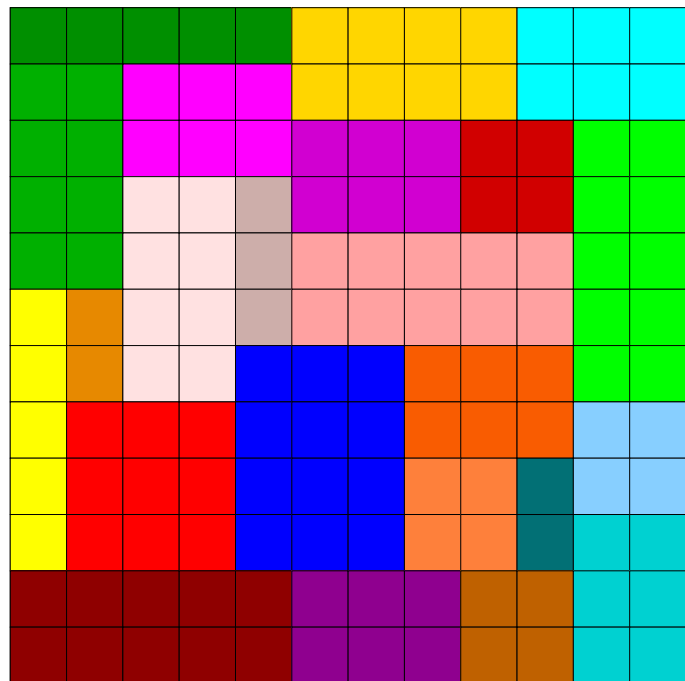
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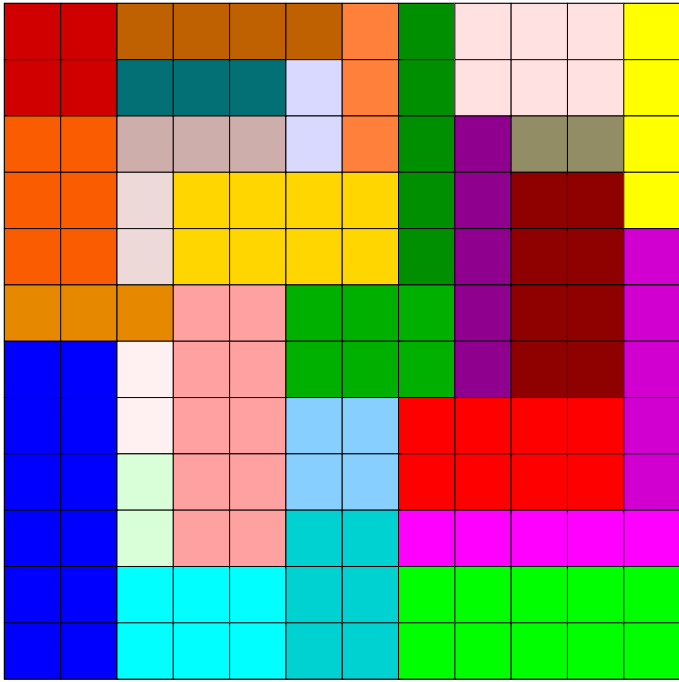


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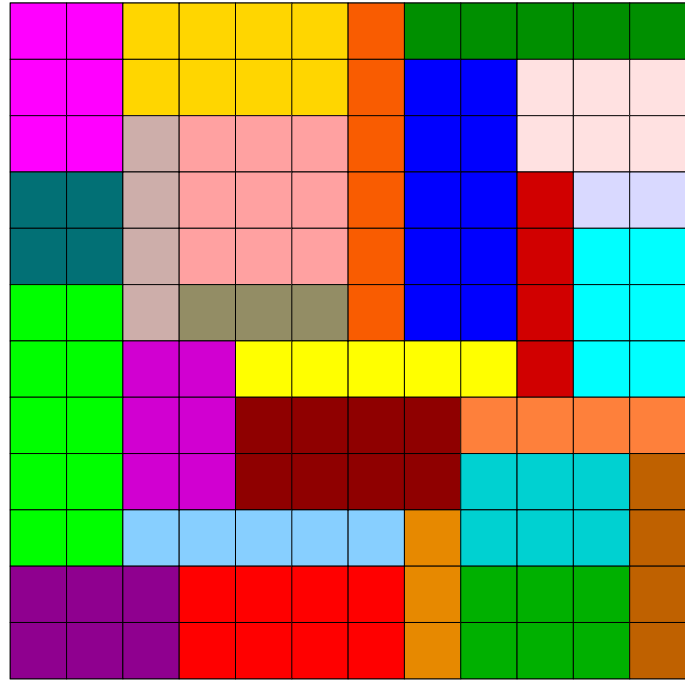


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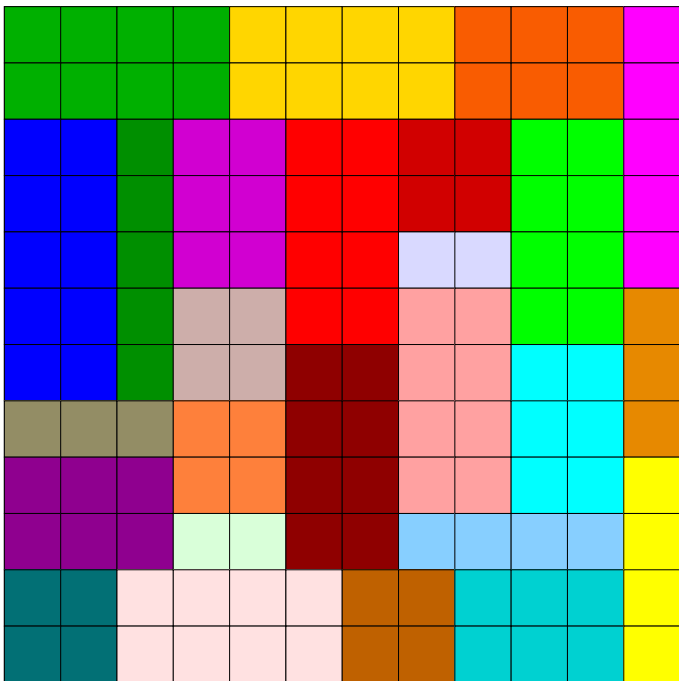
Cell Blocks 12 × 12 solutions



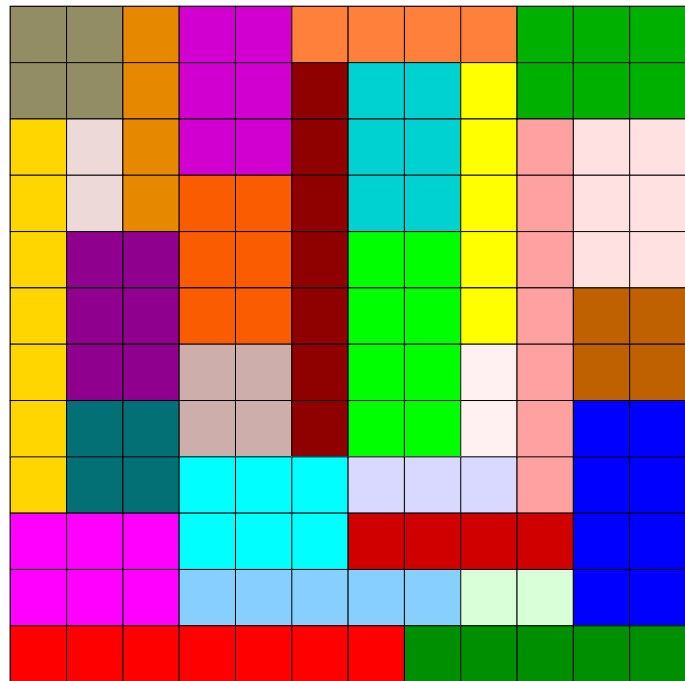
5



6



7



8