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Bakuro Puzzle 2

- Fill the cells with the numbers 1, 2, 4 and 8, together with their binary equivalent.
- Each group of adjacent cells in a row must add up to the number in the clue to its left.
- Each group of adjacent cells in a column must add to the number in the clue above it.
- No group may contain the same number more than once.

	9 1001	6 0110		7 0111	1 0001	15 1111	
5 0101			7 0111				3 0011
15 1111					3 0011		
		6 0110			10 1010		
	12 1100			3 0011			
	12 1100			3 0011			
12 1100			10 1010			10 1010	
9 1001			7 0111				
				9 1001			

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Bakuro Hints

Here is an example with solution

/	9 1001	6 0110
3 0011		
12 1100		

/	9 1001	6 0110
3 0011	1 0001	2 0010
12 1100	8 1000	4 0100

We can deduce the answer by noticing that the top row adds up to 3. The only way this can be done with the numbers 1,2,4 and 8 is with $1 + 2$. Now the leftmost column must add up to 9, so it must be $1 + 8$. The top left cell must hold a number from both those sums, which means it must be 1 (0001 in binary).

Now if the top left cell hold 1, then the top right cell must hold 2 (0010 in binary) to make the row add up to 3. Similarly, the bottom right column must be 8 (1000) to make the leftmost column add to 9. That leaves the bottom right cell. It must hold 4 as the bottom row has to add up to 12 ($8 + 4$). That also makes the rightmost column add to 6 as required.

Binary numbers are just a way of making up numbers by adding powers of 2 (1, 2, 4, 8, ...) together, just like decimal numbers involve adding powers of 10 (1, 10, 100, 1000) together. Spot the pattern: the answers that go in the grid only have a single 1 in their binary representation. The binary of the clue actually tells you which numbers you are looking for. 12 is 1100 in binary which says that 12 is made up of one 8 (1000) and one 4 (0100) with no 2s and no units, added together. The row must therefore hold an 8 and a 4. Similarly, 9 is 1001 in binary: one 8 (1000), no 4, no 2 and one unit (0001) added together, so its column must hold an 8 and a 1.