

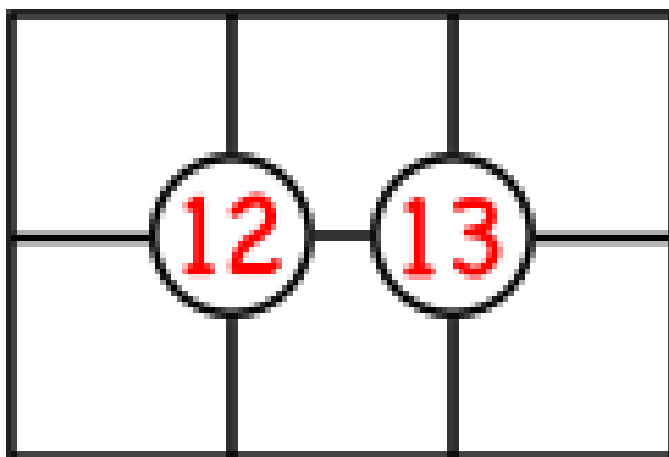
Puzzle of the Week

Sujiko Puzzle – 1

In this small 2 by 3 Sujiko puzzle, use each of the numbers from 1 to 6 once in the six squares. The number in each circle must be the sum of the four squares that surround it.



THE CHALLENGE: Fill in this Sujiko puzzle.



1 2 3 4 5 6

EXPLORATION: How many different answers can you find?

Puzzle of the Week

Sujiko Puzzle – 1 – Notes

THE CHALLENGE & EXPLORATION: Each column of numbers - the 2 and 6, the 1 and 3, and the 4 and 5 - can be reversed in the answer given below. This produces a collection of $2 \times 2 \times 2 = 8$ possible answers, one of which is shown below.

6	1	4
2	3	5

The diagram shows a 2x3 grid of numbers. The top row contains 6, 1, and 4. The bottom row contains 2, 3, and 5. The number 12 is written in red in a circle over the intersection of the first and second columns. The number 13 is written in red in a circle over the intersection of the second and third columns.

The 1 and 3 must be in the middle column. Call the middle numbers A and B. Add things up in two ways. The sum of all the entries in the two 2 by 2 squares is $12 + 13 = 25$. On the other hand, that sum is all six numbers (1 to 6) with the middle column counted twice - that is, the sum is $1 + 2 + 3 + 4 + 5 + 6 + A + B = 21 + A + B$. This means $25 = 21 + A + B$, or $4 = A + B$. This forces A and B to be 1 and 3.

With the middle column being 1 and 3, that forces the sum of the two entries in the right column to be 9. We can only get 9 as $4 + 5$ or $3 + 6$, but the 3 is already used. Therefore the rightmost column is 4 and 5.

There are only two numbers, 2 and 6, remaining for the leftmost column, and they work.