

The Zero Mystic Square

This Square is Empty!

-2	18	26	19	Row Sums
-20	0	8	1	_____
-31	-11	-3	-10	_____
-16	4	12	5	_____
<div style="display: flex; justify-content: space-around; width: 100%;"> _____ _____ _____ _____ </div>				Column Sums

Warmups: Find the total of all 16 entries.

Next, write the row sums to the right of the square, and write the column sums under each column.

Now try this game:

1. Pick any one of the 16 numbers. Write it down and cross out the rest of that number's row and column.
2. Pick a second number from those that remain. Again cross out the rest of that row and column.
3. Pick a third and fourth number following the same procedure.
4. Add the four numbers selected and write the total.
5. Try it again choosing a different set of four. Have a friend try it.

Bonus: What is the secret of the Zero Mystic Square? You all remember the multiplication table, yes? This square's entries are actually the sums of an addition table. But what numbers were being added? Can you make up a different Zero Mystic Square?

Solutions

The row totals are 61, -11, -55 and 5. The column totals are -69, 11, 43 and 15.

The sum of all entries is zero.

The (unseen) addends that created the addition table are 10, 30, 38 and 31 going across and -12, -30, -41 and -26 down the side, but this solution is not unique.