

Isn't That SUM-thing?

Overview: This is a neat trick that you can use to really puzzle your friends and family. You're going to sum five different numbers; three of them are random picks from the audience. The trick is that by only knowing the first number, you can predict the final number every time.

Materials

- Pencil
- Paper

Activity: Do this trick by yourself first before doing it in front of an audience. Let's pretend you already have, and that you're doing it live in front of people. You're going to magically add five numbers (a couple of which you don't even know yet) and come up with the answer *before* you know all the numbers in the sum.

Here's what you do:

Ask your audience to give you any three-digit number. Say for example the kid in back shouts out "645!" Write this number at the top of your list.

645

Now you're going to predict the final end number before knowing the rest of the numbers. On a scrap of paper, write down this number: 2643, and hand it to someone for safe-keeping until the end of your trick.

How did I know to write 2643? Simple! From the original number: 645, put a "2" in front of the entire number (in the thousands place), and subtract 2 from the last (the ones) digit. Once this number is safely hidden away, ask for another three-digit number.

Suppose the kid in front calls out "473!". Write this new number below 645.

Now it's your turn to come up with a number. You can't just come up with any number though, because it's got to be done in a special way for this trick to work. Your new number is such that when you add it to the second number listed it gives 999.

645

473

So look at 473: what number do you need to add to 4 in the hundreds place to make it a 9? 5!

What number do you need to add to the 7 in the tens place to make it a 9? 2!

And what number do you need to add to the ones digit to make it a 9? 3! So your new number that you write below is 526.

645

473

526

Ask your audience for another three-digit number. Suppose grandpa shouts out "128!" Write this under 526.

You need to do the 999 trick again (like you did to get 526). So quickly write 871 below 128.

Now ask for a volunteer to use a calculator to sum all five numbers and give you the answer. As they are punching in the numbers, quickly write down your initial guess of 2,643.

Now ask the person holding the scrap of paper to read the number. *Ta-daa!*

645

473

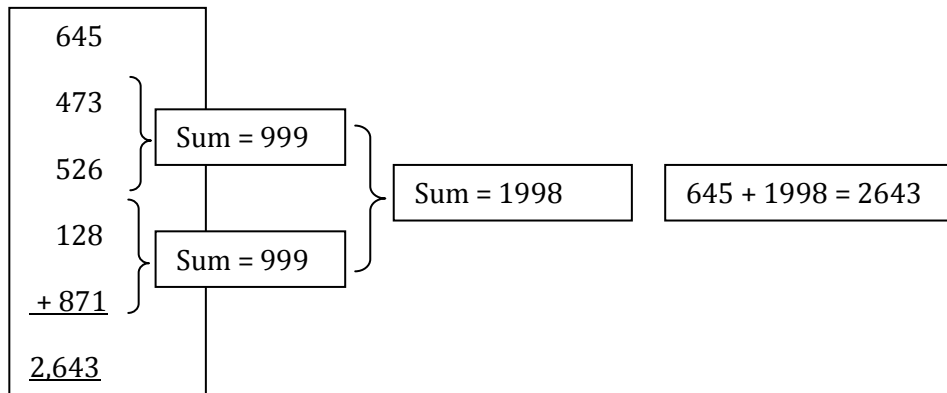
526

128

<u>+ 871</u>

2,643

Were you able to figure this trick out? The real trick is that you're simply adding 1,998 to the first number that you received. No matter which other two numbers are given to you, make sure the number you write down makes each pair of numbers' sum 999. If you do this correctly twice, then the row of numbers you add together will be the same as the initial number plus 1,998.



Now it's your turn! Work out the exercises below. (You'll find answers at the back of this book.)

Exercises

Predict the end result for the following numbers:

1. 235
2. 988
3. 002
4. 999
5. 427
6. 777
7. 559
8. What would be the difference between a number 769 and its predicted result based on the above knowledge?
9. A mathematician was given a number x and gave its end result as 2877. What is the value of x ?
10. Suzanne was asked by her friend to predict the end results of 932 within a few seconds. If she was given 432 as one of the two additional numbers to complete the proof of the predicted number, which number did she write immediately afterwards?

Answers to Exercises: Isn't that SUM-thing?

1. 2233
2. 2986
3. 2000
4. 2997
5. 2425
6. 2775
7. 2557
8. 1998
9. 879
10. 567