

A Brilliant Number Trick

Name _____ Class: _____

The Number Trick	Example
The teacher asks a student for a number, any number.	21
The teacher then asks a student for a 2 nd number.	9
Add the 2 numbers, to get the 3 rd number in the list.	30
Add the last two numbers in the list, to get the next number (i.e. $9 + 30 = 39$).	39
Continue writing down the sum of the last two numbers, until there are 10 numbers in the list (e.g. $30 + 39 = 69$ and so on).	69 108 177 285 462 747
The teacher now says, "I'll bet you 2 hours homework that I can add the ten numbers mentally, faster than you can add the numbers using a calculator."	
When the students foolishly agree, the teacher immediately writes down the sum, even before the students manage to press the [On] button on their calculator.	1947

Your job is to figure out how the trick works. Clearly explain your answer.

Hint: Let the first number be a , and the second number be b . Then the third number is $a + b$.