**Gauß needs help! (Sums of a lot of numbers).**

81582% *of* 67114 *of* 5,774[ingitaly](https://www.codewars.com/users/ingitaly)

C#

* [Train Again](https://www.codewars.com/kata/gauss-needs-help-sums-of-a-lot-of-numbers/train/csharp)
* [Next Kata](https://www.codewars.com/trainer/csharp)

Details

[Solutions](https://www.codewars.com/kata/gauss-needs-help-sums-of-a-lot-of-numbers/solutions/csharp)

[Forks (4)](https://www.codewars.com/kata/gauss-needs-help-sums-of-a-lot-of-numbers/forks/csharp)

[Discourse (101)](https://www.codewars.com/kata/gauss-needs-help-sums-of-a-lot-of-numbers/discuss/csharp)

* Add to Collection
* |
* Share this kata:

Due to another of his misbehaved, the primary school's teacher of the young Gauß, Herr J.G. Büttner, to keep the bored and unruly young schoolboy Karl Friedrich Gauss busy for a good long time, while he teaching arithmetic to his mates, assigned him the problem of adding up all the whole numbers from 1 through a given number n.

Your task is to help the young Carl Friedrich to solve this problem as quickly as you can; so, he can astonish his teacher and rescue his recreation interval.

Here's, an example:

f(n=100) // returns 5050

It's your duty to verify that n is a valid positive integer number. If not, please, return false (None for Python, null for C#).

**Note:** the goal of this kata is to invite you to think about some 'basic' mathematic formula and how you can do performance optimization on your code.

Advanced - experienced users should try to solve it in one line, without loops, or optimizing the code as much as they can.

**Credits:** this kata was inspired by the farzher's kata ['Sum of large ints'](http://www.codewars.com/kata/54c2fc0552791928c9000517) . In fact, it can be seen as a sort of prep kata for that one.

<https://www.codewars.com/kata/gauss-needs-help-sums-of-a-lot-of-numbers/csharp>

public static long? RangeSum(long n)

{

// Note: This function's runtime can be made to be near-instant, but it should not be necessary for this Kata.

// Insert your code here... and go crazy!

if (n < 0) return null;

return (n \* (n + 1)) / 2;

}