Consider the sequence 1, 2, 3, … k. You have to put a '+' or '−' sign between these numbers so that the sum becomes zero (e.g. if k is 4, you can do it like $1 - 2 - 3 + 4 = 0$). For how many values of k between 2001 and 2100 (both inclusive) this can be done?

<u>Solution</u>

This condition will be executed if the sum of all the numbers from 1 to n is divisible by 2, where n is in the range from 2001 to 2100.

So, the number of numbers that range from 2001 to 2100 and satisfy the given condition is 50.

Answer k = 50