The Sum

One of your friends wrote numbers 1, 2, 3, ..., N on the sheet of paper. After that he placed signs + and - between every pair of adjacent digits alternately. Now he wants to find the value of the expression he has made. Help him.

For example, if N=12 then +1 -2 +3 -4 +5 -6 +7 -8 +9 -1+0 -1+1 -1+2 = 5

Input

Each line contains one integer number N ($1 \leq N \leq 10^{15}$). Last line contains 0 and shouldn't be processed. Number of lines in the input does not exceed 40.

Output

For every line in the input write the answer on a separate line.

Example

Input:
12
0

Output:
5