Sum of primes

Léo had been defeated by XerK at the battle of the ThermoPell. 300 braves fell ; XerK as a living God decided to allow a new honor table, for those who can use less than 900 characters in his new problem. This problem is extremely simple, but you have to be extremely fast.

Input

The lonely line of input contains an integer ***N***.

Output

You have to print the sum of all primes up to ***N***.

Examples

Input_1:
19

Output_1:
77

Input_2:
1000000000

Output_2:
24739512092254535

Explanation

The first sum is

2 + 3 + 5 + 7 + 11 + 13 + 17 + 19 = **77**

Constraints

0 < N <= 2×10^9

The classical problem SUMPRIM2 is the reverse task.
Time limit allows some slow languages to finish in time, it could be hard.
For your information, my 690-Byte C code need a total time of 1.15s for the 30 input files.
Warning : You have 900B as code size limit.
;-) Have fun.