

Easy Factorials

Write and debug a program that is a given value of the factorial, will determine its initial value of N.

And output the N and length of factorial of a number N + N.

$N \leq 10^{18}$;

NOTE

$\text{Factorial}(N) = (1 * 2 * \dots * (n-1) * n)$;

Input

Factorial of N.

Output

Two integer numbers N and length of factorial of N+N.

Example

Input:

24

Output:

4 5