B6 – Substrings

How many distinct substrings does a given string S have? For example. if S =“abc”, S has 7 distinct substrings: “”, “a”, “b”, “c”, “ab”, “bc”, “abc”. Note that the empty string and S itself are considered substrings of S. On the other hand, if S = “aaa”, S has only 4 distinct substrings: “”, “a”, “aa”, “aaa”.

Input:

The input contains a line giving S, a string of from 1 to 1000 alphanumeric characters.

Output:

The output consists of a single line, giving the number of distinct substrings of S. Try to write an efficient program.

Input and output samples:

Input:
abc

Output:
7

Input:
aaa

Output:
4