

Problem H. Distinct Substrings

Time limit 1000 ms

Mem limit 524288 kB

Count the number of distinct substrings that appear in a string.

Input

The only input line has a string of length n that consists of characters a–z.

Output

Print one integer: the number of substrings.

Constraints

- $1 \leq n \leq 10^5$

Explanation: the substrings are **a** , **b** , **aa** , **ab** , **ba** , **aba** , **baa** and **abaa** .

Sample

Input	Output
abaa	8