

Problem A. List of students

Input file: `standard input`
Output file: `standard output`
Time limit: 5 seconds
Memory limit: 256 megabytes

Your teacher on Algorithms in Data structures in MSAI wants to calculate number of students who solved at least one problem in home assignments.

He has logins of students for each successful submit. Please, help him to obtain number of students who solved at least one problem — this is a number of distinct logins is given list.

Input

First line contains integer number $0 < N \leq 1000$ — number of successful submits. Each of following N lines contains string $s_i : 0 < |s_i| \leq 1000$, which contains latin letters and digits only (a-z, A-Z, 0-9) — login of student who made this successful submission.

Output

Print single integer number — number of students who solved at least one problem.

Examples

standard input	standard output
3 Gennadiy Gennadiy Gennadiy	1
7 Knuth Kormen Dijkstra Kormen Dijkstra Dijkstra Dijkstra	3
24 XRustle elphant0m rvkorkin nataavorobyeva pravinbs polinatsybina paraskharbanda TimurValeev durdymyradovk reasty Victorsnovikov d89175673172 iparrondo ildartregulov kunjavskij fabura andreipitkevich ondarevgeniia nazkalid smikhalochkin yuzuoyao avbochkov alexfrauch asilayev	24

Note

1. Yes, you can use all python built-ins
2. Yes, this problem is extremely easy =)

Problem B. Distinct substrings

Input file: **standard input**
Output file: **standard output**
Time limit: 10 seconds
Memory limit: 512 megabytes

Given string s : $0 < |s| \leq 3000$. Calculate number of distinct substrings in this string.

Input

The single line contains string s : $0 < |s| \leq 3000$, which consists only of lowercase latin letters. String is terminated with line break character.

Output

Print single integer number — number of distinct substrings in the given string.

The answer is considered to be correct if it is given with absolute error no more than 10:

$$|ans_{given} - ans_{correct}| \leq 10$$

Examples

standard input	standard output
abc	6
aba	5
aabaaba	17

Note

If probability of collision in your hash is small enough and small error is suitable, you may omit explicit comparison of strings.