Problem C. Circular Shift

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	256 mebibytes

Vasya was at a meeting during his working day at Yandex. Suddenly he thought about a string s consisting of lowercase English letters.

Then he decided that a string $t = t_1 t_2 \dots t_m$ $(m > 0)$ is called a *good* string with respect to s if t is a substring of s and the left circular shift $t' = t_2 \dots t_m t_1$ of string t is also a substring of s.

Vasya was going to calculate the number of different good strings t with respect to the given string s... but suddenly a colleague asked him a question, so he had to return back to reality. Find that number for Vasya while he is busy with the meeting.

Input

The only input line contains a string s consisting of n $(1 \le n \le 300\,000)$ lowercase English letters.

Output

Output a single integer: the number of different good strings t with respect to the given string s.

Examples

standard input	standard output
abaac	7
aaa	3

Note

In the first sample case, the good strings are exactly the following strings: `a`, `b`, `c`, `aa`, `ab`, `ba`, `aba`.

In the second sample case, the good strings are exactly the following strings: `a`, `aa`, `aaa`.