

Crypto

SEASON 8 – FOURTH ROUND



Alan Turing is working on breaking another code. For this he needs to write a program which finds the period of a given string. We will call the period of a string the length of its shortest substring which repeats throughout the whole string. For example, if we look at `abcbabc`, `abc` repeats exactly twice and because of that the period is 3. The same goes for `abcbabcab`, meaning that it is not needed for this substring to repeat a whole number of times. Notice that the period of a string can be its length, e.g. `axaxaz`, the period in this case is 6.

Normally, Turing is perfectly capable of handling this task on his own, but currently he is having some trouble with the police for some absurd reasons. Help him by writing the program from him.

Input

From the first line of the file `crypto.in` a string, consisting of only lowercase Latin letters with no spaces, is inputted – the string whose period we are looking for.

Output

In the output file `yen.out` print one positive whole number – the period of the string.

Constraints

$1 \leq \text{the length of the string} \leq 1000$

Time limit: 0.2 sec

Memory limit: 256 MB

Sample tests

Input (<code>crypto.in</code>)	Output (<code>crypto.out</code>)	Input (<code>crypto.in</code>)	Output (<code>crypto.out</code>)
<code>zoozoozoozo</code>	<code>3</code>	<code>abracadabra</code>	<code>7</code>

Constraints

In the first test `zoo` repeats and in the second one – `abracad`.