Distance

English Vietnamese

Consider a sequence D consisting of an infinite number of hexadecimal digits made by concatenating all the positive integers 1, 2, 3, 4,..., N,...

The sequence D begins with:

123456789ABCDEF10111**21**31415161718191A1B1C1D1E1F20**21**22...

We may see D as an infinite string of hexadecimal digits. Let S be an arbitrary string consisting only of hexadecimal digits. The number of occurrences of S in D as a substring is infinite. The distance between two nonoverlapping occurrence of S is the number of digits between these two occurrences. For instance, if S='21', the distance between the first two occurrences of S is 27 (as illustrated above).

Task

You are given a string S of at most 30 characters long. Write a program that determines the distance between the first two occurrences of S in D.

Input

The input contains the string S in a single line.

Output

The output contains the distance between the first two occurrences of S in D in a single line.

Example

Input
21
Output
27

Input
A
Output
26