

# 12<sup>th</sup> South African Regional ACM Collegiate Programming Contest

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## Problem G - Purple Balloon Up and down

### Problem Description

According to the Antiquated Concise Manual for Builders, a step comprises of two treads and one riser. Figure 1, reproduced with the permission of the International Centuary Publishing Company, illustrates this.

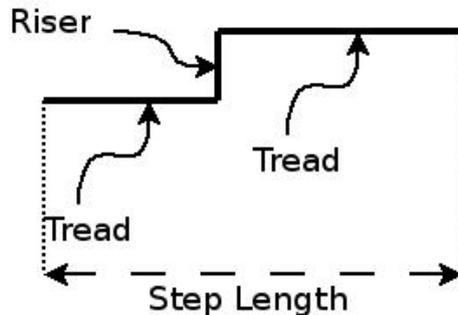


Figure 1: Illustration of a Step

The Manual, written by the Abacus Monks who originate from the mountains of the principality of Les-otho, uses the analogy of a step being a sequence of digits to further discuss related concepts. Subsequent digits of the same value form the tread of the step and an increment or decrement of 1 (one) in the digit signifies a riser. For example:

111122222

is defined as a step. Where 1111 corresponds to the first Tread in Figure 1 and 22222 the second Tread in the figure. An increment or decrement of more than 1 is defined as an illegal step and is not considered. Steps have length, defined by the sum of the number of digits in the first tread and the number of digits in second tread. The length of the step given above is 9.

## Input

An arbitrary number of staircases are given as input. Each staircase consists of steps as defined in the problem description. Digits in the range [1..9] are considered significant to define a tread, no other digits will be used. The definition of a staircase may consume any number of input lines, this number is provided before the definition of a staircase. An input line will not exceed 80 characters in length. A value of -1 signifies the end of input.

## Output

The length of the longest step for the particular staircase. All staircases will have at least 1 step.

## Sample Input

```
1
111122222
1
333322222
1
11122233334444444
3
1111111111111
22222222222
33333333333
3
11111111111111111112222222
2222222222222222222222222223
333
-1
```

## Sample Output

```
9
9
11
25
55
```

## Time Limit

5 seconds