

Problem A

2 the 9s

Time limit: 1 second Memory limit: 1024 megabytes

Problem Description

A well-known trick to know if an integer N is a multiple of nine is to compute the sum S of its digits. If S is a multiple of nine, then so is N. This is a recursive test, and the depth of the recursion needed to obtain the answer on N is called the 9-degree of N.

Your job is, given a positive number N, determine if it is a multiple of nine and, if it is, its 9-degree.

Input Format

The input is a file such that each line contains a positive number. A line containing the number 0 is the end of the input. The given numbers can contain up to 1000 digits.

Output Format

The output of the program shall indicate, for each input number, if it is a multiple of nine, and in case it is, the value of its nine-degree. See the sample output for an example of the expected formatting of the output.

Sample Input 1

Sample Output 1

9 is a multiple of 9 and has 9-degree 1.