Problem C - 2 the 9s  
Time Limit: 1 second

**Introduction to the problem**  
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.  
  
**Description of the input**  
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.  
  
**Description of the output**  
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:**  
999999999999999999999  
9  
9999999999999999999999999999998  
0  
  
**Sample output**  
999999999999999999999 is a multiple of 9 and has 9-degree 3.  
9 is a multiple of 9 and has 9-degree 1.  
9999999999999999999999999999998 is not a multiple of 9.

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999999999999999999999

9

9999999999999999999999999999998

18

11111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111

101231456781231245678912310213245496879879412313032154987987984213012645978123456789123123154657981231032132457892120321546879812023134564879121021549879875102165487931231548792130215468789453120215467898951200212154878132021345678923123032146549879142103213456789798721320321564678465651320216548798745132023165468798798412120321546496821324654987913020216549687987986516545612302316549878945132023154687978951651322132023156487874212120214548787879879845150654987984502645948978974984552120261101231456781231245678912310213245496879879412313032154987987984213012645978123456789123123154657981231032132457892120321546879812023134564879121021549879875102165487931231548792130215468789453120215467898951200212154878132021345678923123032146549879142103213456789798721320321564678465651320216548798745132023165468798798412120321546496821324654987913020216549687987986516545612302316549878945132023154687978951651322132023156487874212120214548787879879845150654987984502645948978974984552120261

45454545454545454545454545454545454545

2014547891534112345648978915132134567892132154679879423132131

1245674897981231546549687987543513215446879879864135454878974651321345467879

987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321987654321

1111111111111111111111111111111111112222222222222222222222222222222222222222222222233333333333333333333333333333333333333333344444444444444444444444444444444444444444444445555555555555555555555555555555555555555

125487121214571212154878

2358954789999

0

999999999999999999999 is a multiple of 9 and has 9-degree 3.↵\r\n

9 is a multiple of 9 and has 9-degree 1.↵\r\n

9999999999999999999999999999998 is not a multiple of 9.↵\r\n

18 is a multiple of 9 and has 9-degree 1.↵\r\n

1111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111...(行後省略)↵\r\n

1012314567812312456789123102132454968798794123130321549879879842130126459781234567891231231546579812310321324578921203215468798120231345648791210215498798751021654879312315487921302154687894531202154678989512002121548781320213456789231230321465498791421032...(行後省略)↵\r\n

45454545454545454545454545454545454545 is a multiple of 9 and has 9-degree 2.↵\r\n

2014547891534112345648978915132134567892132154679879423132131 is not a multiple of 9.↵\r\n

1245674897981231546549687987543513215446879879864135454878974651321345467879 is not a multiple of 9.↵\r\n

9876543219876543219876543219876543219876543219876543219876543219876543219876543219876543219876543219876543219876543219876543219876543219876543219876543219876543219876543219876543219876543219876543219876543219876543219876543219876543219876543219876543219876...(行後省略)↵\r\n

1111111111111111111111111111111111112222222222222222222222222222222222222222222222233333333333333333333333333333333333333333344444444444444444444444444444444444444444444445555555555555555555555555555555555555555 is not a multiple of 9.↵\r\n

125487121214571212154878 is not a multiple of 9.↵\r\n

2358954789999 is not a multiple of 9.↵\r\n