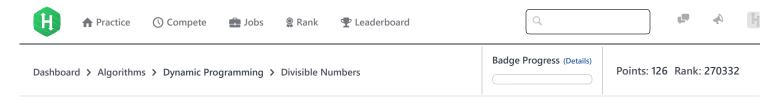
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# Divisible Numbers



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Given an integer, n, find the smallest integer m such that m is divisible by n (i.e., n is a factor of m) and satisfies the following properties:

- $oldsymbol{m}$  must not contain zeroes in its decimal representation.
- The sum of m's digits must be *greater than or equal to* the product of m's digits.

Given n, find m and print the number of digits in m's decimal representation.

### **Input Format**

A single integer denoting n.

#### **Constraints**

- $1 \le n \le 3 \times 10^4$
- *n* is not divisible by 10.

#### **Time Limits**

• The time limits for this challenge are available here.

## **Output Format**

Print the *number of digits* in the decimal representation of the smallest possible m.

# Sample Input 0

1

#### Sample Output 0

1

## **Explanation 0**

m=1 is evenly divided by n=1, doesn't contain any zeroes in its decimal representation, and the sum of its digits is not less than the product of its digits. Thus, we print the number of digits in m=1 (which also happens to be 1) as our answer.

#### Sample Input 1

9

## Sample Output 1

1

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#### **Explanation 1**

m=9 is evenly divided by n=9, doesn't contain any zeroes in its decimal representation, and the sum of its digits is not less than the product of its digits. Thus, we print the number of digits in m=9, which is 1, as our answer.

f y in Submissions:1033 Max Score:100 Difficulty: Expert Rate This Challenge: ☆☆☆☆☆



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