

A. Numbers

time limit per test: 1 second
memory limit per test: 64 megabytes

Little Petya likes numbers a lot. He found that number 123 in base 16 consists of two digits: the first is 7 and the second is 11. So the sum of digits of 123 in base 16 is equal to 18.

Now he wonders what is an average value of sum of digits of the number A written in all bases from 2 to $A - 1$.

Note that all computations should be done in base 10. You should find the result as an irreducible fraction, written in base 10.

Input

Input contains one integer number A ($3 \leq A \leq 1000$).

Output

Output should contain required average value in format « X/Y », where X is the numerator and Y is the denominator.

Examples

input	Copy
5	
output	Copy
7/3	

input	Copy
3	
output	Copy
2/1	

Note

In the first sample number 5 written in all bases from 2 to 4 looks so: 101, 12, 11. Sums of digits are 2, 3 and 2, respectively.

→ Attention

The package for this problem was not updated by the problem writer or Codeforces administration after we've upgraded the judging servers. To adjust the time limit constraint, a solution execution time will be multiplied by 2. For example, if your solution works for 400 ms on judging servers, then the value 800 ms will be displayed and used to determine the verdict.

Codeforces Beta Round 13

Finished

Practice



→ Virtual participation

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Language: GNU G++23 14.2 (64 bit, ms) ▼

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Submission	Time	Verdict
326008256	Jun/25/2025 15:36	Accepted

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implementation math *1000

No tag edit access

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