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PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS HACKS ROOM STANDINGS CUSTOM INVOCATION

D. Fun with Integers

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

You are given a positive integer n greater or equal to 2. For every pair of integers a and b ($2 \leq |a|, |b| \leq n$), you can transform a into b if and only if there exists an integer x such that $1 < |x|$ and ($a \cdot x = b$ or $b \cdot x = a$), where $|x|$ denotes the absolute value of x .

After such a transformation, your score increases by $|x|$ points and you are **not allowed** to transform a into b nor b into a anymore.

Initially, you have a score of 0. You can start at any integer and transform it as many times as you like. What is the maximum score you can achieve?

Input

A single line contains a single integer n ($2 \leq n \leq 100\,000$) — the given integer described above.

Output

Print an only integer — the maximum score that can be achieved with the transformations. If it is not possible to perform even a single transformation for all possible starting integers, print 0.

Examples

input	Copy
4	
output	Copy
8	

input	Copy
6	
output	Copy
28	

input	Copy
2	
output	Copy
0	

Note

In the first example, the transformations are $2 \rightarrow 4 \rightarrow (-2) \rightarrow (-4) \rightarrow 2$.

In the third example, it is impossible to perform even a single transformation.

Codeforces Round #520 (Div. 2)

Finished

→ Practice?

Want to solve the contest problems after the official contest ends? Just register for practice and you will be able to submit solutions.

[Register for practice](#)

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

[Start virtual contest](#)

→ Problem tags

dfs and similar graphs implementation
math *1800

No tag edit access

→ Contest materials

- Announcement
- Tutorial

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