

Contest Duration: 2025-04-05(Sat) 23:00 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250405T2100&p1=248>) - 2025-04-06(Sun) 00:40 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250405T2240&p1=248>) (local time) (100 minutes)

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C - $2^a b^2$

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Time Limit: 2 sec / Memory Limit: 1024 MiB

Score : 350 points

Problem Statement

A positive integer X is called a good integer if and only if it satisfies the following condition:

- There exists a pair of positive integers (a, b) such that $X = 2^a \times b^2$.

For example, 400 is a good integer because $400 = 2^2 \times 10^2$.

Given a positive integer N , find the number of good integers between 1 and N , inclusive.

Constraints

- $1 \leq N \leq 10^{18}$
- N is an integer.

Input

The input is given from Standard Input in the following format:

N

Output

Print the number of good integers between 1 and N , inclusive.

Sample Input 1

[Copy](#)

20

[Copy](#)

Sample Output 1

[Copy](#)

5

[Copy](#)

There are five good integers between 1 and 20: 2, 4, 8, 16, and 18.

Thus, print 5.

Sample Input 2

[Copy](#)

400

[Copy](#)

Sample Output 2

[Copy](#)

24

[Copy](#)

Sample Input 3

[Copy](#)

1234567890

[Copy](#)

Sample Output 3

[Copy](#)

42413

[Copy](#)

Note that the input might not fit in a 32-bit integer type.

'#telegram)

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