XXVI Olimpiada Informática Española
Final día 2
`secuencia`

Secuencia de Siguientes Múltiplos

Ana likes to play with numbers and make sequences with them. Now she is playing making sequences as follows: she first chooses a positive integer m, which will be the first term of the sequence, $a_1 = m$. Then, for all $i \geq 2$, a_i is the smallest multiple of i that is greater than or equal to a_{i-1}. Here are some examples of possible sequences for different values of m:

m	Sequence
1	1,2,3,4,5,6,7, ...
2	2,2,3,4,5,6,7, ...
3	3,4,6,8,10,12, ...
4	4,4,6,8,10,12, ...
5	5,6,6,8,10,12, ...
7	7,8,9,12,15,18, ...
9	9,10,12,12,15,18, ...

Ana has noticed that, for many values of m, there are two consecutive terms of the sequence that are equal, in other words, there exists an i such that $a_i = a_{i+1}$. The case $m = 5$ is an example, since $a_2 = a_3 = 6$. But there are other numbers for which this does not happen. For example, for $m = 1$ or $m = 3$ the sequence has all terms distinct. These values of m for which the resulting sequence does not have two consecutive equal numbers are called *special* numbers.

Can you help Ana to find the n-th special number?

Input and output

The input consists of a positive integer n.

You must print an integer, the n-th special integer.

Examples

Example 1

Input:

```
1
```

Output:

```
1
```

Example 2

Input:

```
2
```

Output:

```
3
```

Example 3

Input:

```
3
```

Output:

```
7
```

Example 4

Input:

```
123456
```

Output:

```
11970633999
```

Constraints

$1 \leq n \leq 10^7$.

Subtasks

1. (3 points) $n = 5$.
2. (8 points) $n \leq 20$.
3. (9 points) $n \leq 500$.
4. (65 points) $n \leq 10^5$.
5. (15 points) No additional restrictions.