Secondary Factorial

Factorial of an integer n, denoted as n! is defined as the product of the first n natural numbers

n! = 1*2*3....*n

1! = 1 and 0! = 1

We define a secondary factorial of a number n, denoted by SF(n), as follows:

SF(n) = 1*3*5*....*n, if n is odd and

SF(n) = 2*4*6*....*n if n is even

If n is an odd number, SF(n) is defined as the product of all the odd numbers, starting from 1, till the number n. SF(5)= 1*3*5= 15.

If n is an even number, SF(n) is defined as the product of all the even numbers, starting from 2, till the number n. SF(6)=2*4*6=48.

Given a number k, write a code to compute SF(n), where k = n!. For the given number k, If there is no number n such that n! = k then, your code should print -1.

Illstration

Given k = 24 then 24 = 4! and

SF(4) = 2* 4 = 8.

Given k=25, there is no number n such that 25 = n!, then the out put should be -1.

Given k=6, 6=3!. SF(3)=1*3=3

Input Format

First line contains an integer, k

Ouput Format

Print SF(n) if there exists a number n, such that k = n! and -1 otherwise

```
import sys
k=int(input())
x=0
sf=1
while k!=1:
   x=x+1
   if k>1:
      k=k/x
   else:
      print("-1")
      sys.exit()
if x%2==0:
   y=2
else :
   y=1
for i in range(y,x+1,2):
   sf=sf*i
print(sf)
```