Problem A
5 Dinar Coins

Input : STDIN
Output : STDOUT

Amir got paid big time from ACM INSAT and now has K 5-Dinar coins.
If these coins add up to S Dinars or more he is considered rich. Your job is to find out if Amir is rich or not.

IN	1 ≤ K≤ 100 1 ≤ S≤ 100,000
OUT	If the coins add up to S Dinar or more, print "Rich !"; otherwise, print "Not yet" without quotes.

EX 1	INPUT	OUTPUT
	2 9	Rich !

NOTE

Note that the input method specified in the top of this paper is the standard input(stdin). Use these bits of code according to the programming language you are using to be able to read from the stdin.

C++:

```
int myInteger;
string myString;
cin >> myInteger>> myString; // read an integer then a string
```

Java (use the following Scanner object):

```
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sc.close();
```

Problem B

Triple Dots

Input : STDIN
Output : STDOUT

Sondes is in charge of the recruitement process in her company. She starts by registering the names of the new members. However, because of the large number of these members, she decided to cut some corners.
When a new member with the name S decides to join, if the length of his name is less than or equal to K, she will write out his/her full name, but if the name is longer than K, she will write the first K characters of the name and append three dots (...).
For example, when K = 3 and she receives the name "Ahmed" she will register him as "Ahm...".
And when K = 5 and she receives the name "Aycha" she will register her as "Aycha".

IN	$1 \leq K \leq 100$ $1 \leq Length(S) \leq 100$
OUT	Print the string as stated in the problem statement.

EX 1	INPUT	OUTPUT
	3 Ahmed	Ahm...

EX 2	INPUT	OUTPUT
	3 Aycha	Aycha

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```

Problem C
Ons and factorials

Input : STDIN
Output : STDOUT

Sandra likes to count the number of consecutive zeros at the end of factorials.
Given an integer N , return the number of trailing zeroes in N!

$$N! = N * (N-1) * (N-2) * \ldots * 1$$

IN The only line contains N (1 ≤ N ≤ 100,000).

OUT Print the number of trailing zeroes in N!

EX 1	INPUT	OUTPUT
	3	0

EX 2	INPUT	OUTPUT
	5	1

Explanation 1 : 3! = 6, no trailing zeroes.

Explanation 2 : 5! = 120, one trailing zero.

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```

Problem D
BAD 7 !

Input : STDIN
Output : STDOUT

You hate the number 7 right? Me too!
Let us count the number of integers without the digit 7 in decimal (base 10) and octal t(base 8).
How many such integers are there between 1 and N?

IN The only line contains N ($1 \leq N \leq 100$).

OUT Print an integer representing the answer.

EX 1	INPUT	OUTPUT
	20	17

Explanation : Among the integers 1 and 20, 7 and 17 contain the d igit 7 in in decimal. Also , 7 and 15 contain the digit 7 in octal. And so , the 17 integers other than 7, 15, and 17 meet the requirements.

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```

Problem E
Only One Clue

Input : STDIN
Output : STDOUT

There are 201 stones placed on a line. The coordinates of these stones are -100, -99, -98, ... -1, 0, 1, 2, ... 99, 100.
Among them, only K consecutive stones are painted black, while the others are painted white.
We want you to find out which of the stones can potentially be black, and we'll give you one clue.
The clue is that the stone with the number X is black!

IN	$1 \leq K \leq 50$ $-20 \leq X \leq 20$
OUT	Print all the coordinates of the stones that potentially can be painted black, in ascending order.

EX 1	INPUT	OUTPUT
	3 7	5 6 7 8 9

We know that there are three stones painted black, and the stone at coordinate 7 is painted black. There are three possible cases:
- The three stones painted black are placed at coordinates 5, 6 and 7.
- The three stones painted black are placed at coordinates 6, 7 and 8.
- The three stones painted black are placed at coordinates 6, 7 and 9.

Thus, five coordinates potentially contain a stone painted black: 5 , 6, 7, 8, and 9.

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Java (use the following Scanner object):

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```

Problem F
The Ink Problem

Input : STDIN
Output : STDOUT

Yagami Light is the protagonist of a popular anime show named "Death Note". In order to prove his ideals to the world, Yagami decided to eradicate every criminal that exists by using his death note (which is a book used to kill people). He plans to use N notes where each note consumes I ink. Initially, He has an ink limit of L. Help him find the maximum number of notes he can write.

IN	$1 \leq N \leq 100$ $1 \leq L \leq 200$ **N** integers $I_0\ I_1\ I_2\ I_3 \ldots I_{N-1}$ ($1 \leq I_j \leq 200$).
OUT	Print the maximum number of notes Yagami can write.

EX 1	INPUT	OUTPUT
	9 190 10 18 71 22 17 180 52 192 99	6

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Java (use the following Scanner object):

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```

Problem G
That's Magic !

Input : STDIN
Output : STDOUT

A magician has the following three cards:
-A red card with the integer A.
-A green card with the integer B.
-A blue card with the integer C.
He can do the following operation at most K times (K times or less)
Choose one of the three cards and multiply the written integer on it by 2.
His magic trick is successful if, after the operations, these conditions are satisfied :
The integer on the green card is strictly greater than the integer on the red card.
The integer on the blue card is strictly greater than the integer on the green card.

IN $1 \le A \le 10$ $1 \le B \le 10$ $1 \le C \le 10$ $1 \le K \le 20$

OUT Can the magician perform his trick successfully? If the magic can be successful, print "You tricked us!"; otherwise, print "Oh no!"

EX 1	INPUT	OUTPUT
	7 2 5 3	You tricked us !

The magic will be successful if, for example, he does the following operations:

First, choose the blue card. The integers on the red, green, and blue cards are now 7, 2, and 10, respectively.

Second, choose the green card. The integers on the red, green, and blue cards are now 7, 4, and 10, respectively.

Third, choose the green card. The integers on the red, green, and blue cards are now 7, 8, and 10, respectively.

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```
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string myString;
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```

Java (use the following Scanner object):

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```

Problem H
Meryem's Magic

Input : STDIN
Output : STDOUT

In her quest to rule the world, Meryem now have to face the lord of the dark world.
In order to defeat this monster Meryem must find K prime numbers that sum to the magic number N. Meryem remembered Goldbach's conjecture and thought that it could help her.
your task now is to help her find K primes that sum to N.
Definition of a prime :
A prime number (or prime) is a natural number greater than 1 that has no positive divisors other than 1 and itself
(like 2,3,5,7,11 ...)
Goldbach's conjecture states that any even number (greater than 2) is a sum of two primes : $\forall 2 < n, \exists\, p1, p2\ such\ that\ p1 + p2 = n$
where n is even and p1 , p2 are two primes.
This conjecture have been proven to hold for any even number (greater than 2) less than 10^{18}
Can you help Meryem find K primes such that their sum = N, or say that they dont exist?

IN The only input will be the magic number N ($4 \leq N \leq 2500$) and K ($2 \leq A \leq 1000$) the number of primes in that order.

OUT Print out K prime numbers that sum to N. or if this is not possible print "impossible" without the quotes.

EX 1	INPUT	OUTPUT
	2036 4	509 509 509 509

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Java (use the following Scanner object):

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sc.close();
```

Problem I
Blue Cells

Input : STDIN
Output : STDOUT

There is a 2-D matrix of R rows and C columns, all of its cells are white initially.
Hind will choose x different rows of the R rows and y different columns of the C columns, and paint all of the cells contained in those rows or columns with blue paint. When a row is painted, all of its cells are painted (same for a column).
Now Hind is wondering; how many cells painted in white remain?

IN	$1 \leq R \leq 100$ $1 \leq C \leq 100$ $0 \leq x \leq R$ $0 \leq Y \leq C$
OUT	Print the number of white cells that will remain.

EX 1	INPUT	OUTPUT
	3 2 2 1	1

The matrix has 3 rows and 2 columns(6 cells in total).
Hind painted 2 rows and 1 column in blue, so only 1 cell will remain white.

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```

Problem J
404

Input : STDIN
Output : STDOUT

"Dark souls" is known to be one of the hardest video games ever played. To live up to her title, Nawres, the challenge seeker, decided to beat this game. Nawres is now on a quest to kill N monsters and earn S gold. Each monster is worth P_i gold.
As her teammate, help her find the minimum value K so that whatever index j ($1 \leq j \leq N - K + 1$) she chooses, it's guaranteed that the sum of gold earned consecutively ($P_j + \cdots + P_{j+K-1}$) from monster j to monster j+K-1 be greater than or equal to S.

IN

$1 \leq N \leq 10^5$
$1 \leq S \leq 10^6$
$0 \leq P_i \leq 10^5$

OUT

Print k if it exists and "impossible" if it doesn't.

EX 1

INPUT	OUTPUT
8 5 1 0 4 5 0 0 2 1	5

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