



Greetings From Globussoft

- ❖ Given below are 5 Programming questions, you have to solve any 3 out of 5 questions.
- ❖ These 5 questions you can attempt in any technology like C/C++, java, .Net, PHP
- ❖ To solve these 3 questions you've max. 3 hours.
- ❖ While Solving these questions you are not allowed to use any Search Engine like Google, Yahoo, Bing ...

All the best for your test

Globussoft

QUESTION - 1

Gon and Killua are two very talented hunters, and they are also very skilled fighters, however it is well known that Killua is faster and smarter than Gon, and Gon is stronger and is way more decided than Killua. That makes them almost the perfect team (they just need more time to become the most skilled hunters that ever lived) and they are so good as a team that they decided to fight and defeat many enemies (as much as they can) so they made a plan, as the enemies are in a $N \times N$ grid Gon decided to start at position 0,0 of this grid and Killua at position $n-1, n-1$. To maximize the number of defeated enemies Gon moves only to the Right and Down, and Killua to the Left and Up, they count how many enemies they defeated and stop when both of them are in the same cell and they give each other a high five. So if they complete the ride without doing this they will be mad, so that will not be a solution.

However Killua wants this to be perfect, so he is tracing a new plan, but he does not know the best ride, as you are an amazing programmer he asked you for your help and you need to give him the maximum amount of enemies they can defeat together and then give each other a high five, only with this information the super brain of Killua will figure out the rest.

Remember, the ride will not finish if they do not give each other that high five.

The grid has this properties:

‘#’ is an obstacle that neither Gon nor Killua can pass through

‘.’ Is a walkable area

‘*’ is an enemy

Also they move at the same time, if any of them cannot move, it will not be a valid move. They never stand still.

Input

The input consist on several test cases represented by T each of them start with an $2 \leq N \leq 500$ the size of the grid and the grid itself.

Output

Just show the maximum number of enemies that both can defeat, and then give each other a high five. If this cannot be done print -1

Input test:

1

5

..*..

.*.*

#...*

..*..

.....

Output test:

3

QUESTION – 2

You will be given some integers in non decreasing order.
and each time the median is queried you have to report and remove it.
Take the smaller element as median in case of even elements.

Input Specification:

The input contains many test cases. Read until End Of File.
Each test case contains n ($n \leq 100000$) positive integers in non-decreasing order,
along with m queries indicated by -1, all on separate lines. (See the example.)
For a query, print the current median on a single line and remove it from the list.
Each test case ends with 0 on a single line, and two test cases will be separated by an empty line.

All integers are guaranteed to fit in a signed 32-bit container.
A query can only occur if the list is non-empty.

Output**Specification:**

For each test case output m lines containing the answers to the corresponding queries.
Print an empty line after each test case.

Input:

1

2

3

4

```

-1
-1
5
6
7
-1
0

2
3
-1
0
Output :
2
3
5

2

```

QUESTION – 3

Have you solved [FCTRL](#) problem?

In this problem you need to do the same task (given positive integer $n < 10^{100}$ you need to count number of zeroes at the end of the decimal number of $n!$), seems easy(?) but this time only Brainf**k language allowed.

Input

First line of input there is an integer $T \leq 1000$ denoting number of test case.

Next T lines containing an integer n .

Each line is terminated with newline character (ASCII:10)

Output

For each test case, output number of zeroes at the end of the decimal form of number $n!$

Example

```

Input :
6
3
60

```

100
1024
23456
8735373

Output:

0
14
24
253
5861
2183837

QUESTION – 4

Farmer Cream is a businessman that wants to live in the suburbs. He recently bought a little farm in Creamville and wants to earn money from it. After the sell, Farmer Cream has D money a remaining to spend. He's in negotiations with an important fi

rm of farming but he thinks they're not being honest (they're trying to steal some money). He knows the number of fences F in the farm but he doesn't know the number of plots P to farm. The fi

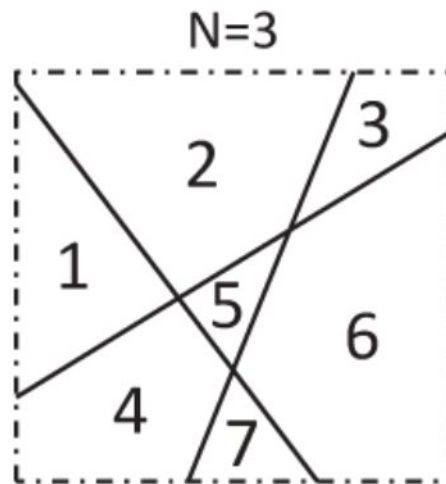
rm is off

ering a budget B per plot, so he needs to multiply the budget per the number of plots to know the total amount of money to spend. He needs to know if he accepts the contract, for that, he needs to have at least M money to live after the buy. Otherwise, the

firm is trying to bankrupt Farmer Cream and take over the farm.

In order to do this, Farmer Cream needs your help. Assuming the fences are lines $y = ax + b$ he only knows three things about them.

1. There is no point in the farm where 3 or more fences collides. So, in one point of the farm there'll be zero, one or two fences.
2. There are no parallel fences in the farm. So if we have two fences represented by $y_1 = a_1x_1 + b_1$ and $y_2 = a_2x_2 + b_2$ we assume that $a_1 \neq a_2$.
3. All the fences collide with each other



In the example, there are 3 fences and 7 plots.

Input

The input contains several test cases, each one corresponding to a different situation. Each test case consists of a single line with four integers $D F B M$ ($1 \leq F, B, M \leq 10^6$) and ($1 \leq D \leq 10^{18}$) separated by a single space. D represents the remaining money of Farmer Cream, F represents the number of fences, B represents the budget in Bsf per plot and M represents the minimum amount of money that Farmer Cream needs to live.

The end of input is indicated by a test case with $D = F = B = M = 0$.

Output

For each test case, you'll print: "The

firm is trying to bankrupt Farmer Cream by X Bsf." where X represents the difference between money to spend plus the money he needs to survive and the money Farmer Cream has. Otherwise, you'll print "Farmer Cream will have Y Bsf to spend." where Y represents the money Farmer Cream will have to spend.

Example

Input:

```
160 1 70 30
500 3 50 100
250000 40 300 5000
0 0 0 0
```

Output:

```
The firm is trying to bankrupt Farmer Cream by 10 Bsf.
Farmer Cream will have 150 Bsf to spend.
The firm is trying to bankrupt Farmer Cream by 1300 Bsf.
```

QUESTION – 5

The niceness of a string s (s comprises of a-z, A-Z and space characters only) is calculated using steps given below.

1. First separate out the string into continuous non zero length string without space. eg. Let us take $s = \text{"now do it now"}$. You can break this into four small strings as "now", "do", "it" and "now". Call the set of these small strings to be G .
2. Now reverse all the strings in G . eg. "won", "od", "ti", "won".
3. Finally you calculate number of distinct strings in you set. in this case answer is 3. as "won", "od" and "ti" are set of distinct strings. Note that "won" comes twice but counted only once.

So you have to find niceness value of a string s .

Note that given string s can contain more than one continuous spaces. eg. "now do it now". Niceness value of this is also same as above given example.

Input

T: number of test cases. ($T \leq 100$)

for next T lines, every line contains one string s (size of string ≥ 1 && $\leq 10^4$)

Output

For every test case, output niceness value of given string s.

Example

Input:

```
4
now do it now
now      do it now
I am  good boy
am am
```

Output:

```
3
3
4
1
```