

KamaChallenge - 2016

Programming

A. Castles

Time limit: 1 second

You are given the castle description. You should write some code to build a projection of a castle.

A cube is to be output by ASCII-graphics as follows:

```

+-----+
/       /|
+-----+ |
|       | +
|       | /
+-----+

```

Neighbor cubes are combined as you can see in the example.

Input:

There are two positive integers M and N – number of rows and columns in the castle. In the following M strings there are N non-negative integers – the castle's height in this square. All numbers are not greater than 100.

Output:

You should output the castle. You should use the least possible number of symbols. Empty space should be represented by dots. All the text lines in the output should be the same length.

Sample input:

```

3 3
3 2 1
2 0 1
1 1 0

```

Sample output:

```

.....+-----+.....
...../       /|.....
.....+-----+ |.....
.....|       | +-----+.....
.....|       | /       /|.....
.....+-----+-----+ |.....
.../       /|       | +-----+
..+-----+ |       | /       /|
..|       | +-----+-----+ |
..|       | /|       /       /| +
..+-----+-----+-----+ |/.
./       /       /|       | +..
+-----+-----+ |       | /...
|       |       | +-----+.....
|       |       | /.....
+-----+-----+.....

```

B. Sphinx Puzzle

Time limit: 1 second

In the computer game you can meet the Sphinx, who gives you a puzzle with reward for the correct answer and game over otherwise.

Game developers added the Sphinx into their game. The Sphinx keeps in mind the word and a gamer tries to guess it. For every gamer's attempt there's answer for the letters in the Sphinx word. For example, if the Sphinx word is TEST then for attempt THE the Sphinx replies that in the word THE, there are 1st, 2nd and 4th letters from the puzzle and the 3rd letter isn't presented.

When the Sphinx is tired, it asks gamer for the last attempt.

You are to write some code to help a gamer.

Input:

In the first line of input there are two positive integer L and N – the length of the Sphinx's word and the number of gamer's attempts ($L, N \leq 100$). In the next N lines *<Sphinx's reply>* *<Games's attempt>* are given. *<Sphinx's reply>* is L symbols + and -. Symbol + in a position means, that the corresponding letter is in the gamer's attempt, and - means that this letter missed by attempt. *<Gamer's attempt>* is the string no longer that 100 symbols in capital letters of English alphabet. The Sphinx's word is also in capitals.

Output:

You should output the word if it is possible to guess it. In case of multiple solutions you are to output "Oh no, I'm dead hero!". If there's no solutions at all, you should print "<CENSORED> cheater!".

Sample input 1:

```
4 6
-+-- WELCOME
+--+ TO
++-+ THE
-+-- PERM
-+-- REGIONAL
++++ CONTEST
```

Sample output 1:

```
TEST
```

Sample input 2:

```
4 3
-+-- PERM
-+-- REGIONAL
++++ CONTEST
```

Sample output 2:

```
Oh no, I'm dead hero!
```

Sample input 3:

```
4 3
-+-- PERM
---- REGIONAL
++++ CONTEST
```

Sample output 3:

```
Oh no, I'm dead hero!
```

C. Market

Time limit: 1 second

There is a marketplace in the game. But the prices there aren't funny.

Game developers have decided to make the prices reasonable. The price of everything is a positive integer gold for each. The reasonable price means that in case of exchange the price in gold is the same. For example if the price of 1 ore is 5 gold, and the price of 1 wood is 3 gold, you should give 2.4 ore for 4 wood because its price is 12 gold. Due to the lack of gold the price is rounded up. That means that in example above you should give for 4 wood 3 ore.

You are to write code to calculate the rates.

Input:

In the first line of input there is the name of item to be sold and the amount of it. In the second line there is the name of the item to be bought and the question mark meaning you are to find the reasonable price. In the 3rd line there is a single integer N – the number of different kinds of items at the marketplace ($N \leq 100$). In the following N lines there are item names and prices. All the input lines are not longer than 100 symbols and contains only digits, spaces and English alphabet symbol, all the numbers are positive integers not greater than 10^9 .

Output:

You should output the first two lines of input with question mark changed to correct answer.

Sample input:

```
Wood 4
Iron ?
3
Iron 5
Oil 6
Wood 3
```

Sample output:

```
Wood 4
Iron 3
```

D. Calendar

Time limit: 1 second

In the game a week is 7 days, a month is 4 weeks, a year is 12 months. Therefore a year is $7 \times 4 \times 12 = 336$ days. But the strange thing in the game is that after 32767th year there is... -32768. And then again up to 32767th year, and after that again year with number -32768. This feature was created by Peter Wrongarm who thought that 2 bytes would be enough to store the year number.

Peter Vasechkin played exactly N days. You are to write code to find day, week, month and year numbers. By the way, the 1st day in the game is the 1st day of the 1st week of the 1st month of the 1st year.

Input:

The only line contains a single non-negative integer $N \leq 10^9$.

Output:

Print the answer as follows “Day <day number>, Week <week number>, Month <month number>, Year <year number>”.

Sample input:

```
9
```

Sample output:

```
Day 3, Week 2, Month 1, Year 1
```