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Chef and A Large Permutation

Problem code: CLPERM



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ALL SUBMISSIONS

MY SUBMISSIONS

SUBMIT

Read problems statements in [Mandarin Chinese](#) and [Russian](#).

Today is Chef's birthday. His mom gifted him a truly lovable gift, a permutation of first N positive integers.

She placed the permutation on a very long table in front of Chef and left it for him to play with it. But as there was a lot of people coming and wishing him. It was interfering with his game which made him very angry and he banged the table very hard due to which K numbers from the permutation fell down and went missing.

Seeing her son's gift being spoilt, his mom became very sad. Chef didn't want his mom to be sad as he loves her the most. So to make her happy, he decided to play a game with her with the remaining $N - K$ numbers on the table. Chef wants his mom to win all the games.

Chef and his mom play alternatively and optimally. In X th move, a player can choose some numbers out of all the numbers available on the table such that chosen numbers sum up to X . After the move, Chosen numbers are placed back on the table. The player who is not able to make a move loses.

Now, Chef has to decide who should move first so that his Mom wins the game.

As Chef is a small child, he needs your help to decide who should move first. Please help him, he has promised to share his birthday cake with you :)

Input

- First Line of input contains a single integer T denoting the number of test cases.
- First line of each test case contains two space separated integers N and K denoting the size of permutation and number of numbers fall down from the table.
- Next line of each test case contains K space separated integers denoting the values of missing numbers.

Output

For each test case, print "**Chef**" if chef should move first otherwise print "**Mom**" (without quotes).

Constraints

- $1 \leq T \leq 10^5, 1 \leq N \leq 10^9$
- $0 \leq K \leq \min(10^5, N)$
- All K numbers are distinct.
- Value of each of K number belongs to $[1, N]$.
- Sum of K over all the test cases does not exceed $5 \cdot 10^5$.

Scoring

- Subtask 1 (13 pts): $1 \leq T \leq 100, 1 \leq N \leq 10^2, 1 \leq K < N$.
- Subtask 2 (17 pts): $1 \leq T \leq 100, 1 \leq N \leq 10^5, K = 0$.
- Subtask 3 (70 pts): Original Constraints.

Example

Input

```
2
5 2
3 5
5 1
1
```

Output

```
Mom
Chef
```

Explanation

For test case 1.

- Mom can choose $\{1\}$ to make 1.
- Chef can choose $\{2\}$ to make 2.
- Mom can choose $\{1, 2\}$ to make 3.
- Chef can choose $\{4\}$ to make 4.
- Mom can choose $\{1, 4\}$ to make 5.
- Chef can choose $\{2, 4\}$ to make 6.
- Mom can choose $\{1, 2, 4\}$ to make 7.
- Chef cannot make 8 out of the numbers on the table.

So, Chef loses and Mom wins.

Author: ma5termind

SUCCESSFUL SUBMISSIONS

User	Score	Mem	Lang	Solution
alex_2008	100.000	0.9M	PAS fpc	View
rd13123013	100.000	2.4M	C	View
aryan225	100.000	2.4M	C	View
bewhatyouwant	100.000	2.4M	C	View
draciel	100.000	2.4M	C	View
tanayjha	100.000	2.4M	C	View
jugal10_	100.000	2.4M	C	View
princerkr	100.000	2.5M	C	View
warahul	100.000	2.6M	C	View
manu4rhyme	100.000	2.6M	C++ 4.3.2	View
little_bits	100.000	2.6M	C	View
kk_cool	100.000	2.6M	C	View

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Tester:	shiplu
Date Added:	28-09-2014
Time Limit:	1 sec
Source Limit:	50000 Bytes
Languages:	ADA, ASM, BASH, BF, C, C99 strict, CAML, CLOJ, CLPS, CPP 4.3.2, CPP 4.8.1, CPP11, CS2, D, ERL, FORTRAN, FS, GO, HASK, ICK, ICON, JAVA, JS, LISP clisp, LISP sbcl, LUA, NEM, NICE, NODEJS, PAS fpc, PAS gpc, PERL, PERL6, PHP, PIKE, PRLG, PYTH, PYTH 3.1.2, RUBY, SCALA, SCM guile, SCM qobi, ST, TCL, TEXT, WSPC

SUBMIT

Comments

bhardwajdb @ 2 Jan 2015 04:32 PM

What would the test case look like if K is 0, would there be an empty line representing no missing element or would next test case will start immediately ?

ma5termind @ 2 Jan 2015 05:01 PM

@bhardwajdb: Next test case starts immediately . :D

ma5termind @ 2 Jan 2015 06:55 PM

@ahmed1ossama13: It means that if chef can make his sum then he will make and passes chance to his mom .

the_bullet @ 2 Jan 2015 11:51 PM

Would the K missing numbers be given in sorted order or could it be random as well?

ma5termind @ 3 Jan 2015 12:24 AM

@the_bullet: Please do not assume anything that is not mentioned in the problem statement .

gvaibhav21 @ 3 Jan 2015 12:56 AM

happy birthday chef ;-)

worldcreator @ 3 Jan 2015 01:57 AM

Sum of choosen numbers in Xth Step \leq X ... am I right??

ma5termind @ 3 Jan 2015 11:59 AM

@gvaibhav21: Thanx

ma5termind @ 3 Jan 2015 12:00 PM

@worldcreator: No, Think otherwise game would never end up..

abhishekssj5 @ 3 Jan 2015 05:31 PM

could k be repeated i.e. missing number reported more than once

abhishekssj5 @ 3 Jan 2015 05:33 PM

and happy birthday chef...)

ma5termind @ 3 Jan 2015 06:17 PM

@abhishekssj5: Please read the problem statement carefully it is explicitly mentioned.. :D

ma5termind @ 3 Jan 2015 06:18 PM

@abhishekssj5: chef says thanx and Happy New Year to you :D

epsilon_0 @ 3 Jan 2015 07:56 PM

the guests should be more careful :(

akulgoel96 @ 3 Jan 2015 08:25 PM

what a good gift.. a permutation!!

nisargshah95 @ 3 Jan 2015 11:59 PM

@ma5termind This is one of the best problem statements I've come across, especially the part where he bangs the table and K numbers fall down. That was really creative! :D

ma5termind @ 4 Jan 2015 02:25 PM

@nisargshah95: thanx for the appreciation. credit goes to praveen dhinwa and codename0047.

sandy1899 @ 4 Jan 2015 03:11 PM

Is Subtask 2 evaluated only after Subtask 1 is passed?

ma5termind @ 4 Jan 2015 03:55 PM

@sandy1899: No, If your code works for any of the subtasks mentioned you will be awarded corresponding points.

ma5termind @ 4 Jan 2015 03:56 PM

@shivam_isc: Please read the input output section carefully and try to match the sample I/O then .

rvns03 @ 4 Jan 2015 09:50 PM

Cool problem :) . Worth the whole day spent for it!

grebnesieh @ 4 Jan 2015 10:36 PM

"Please help him, he has promised to share his birthday cake with you :)" It has been like 2 days since I did this. Where is my cake bro?

ma5termind @ 4 Jan 2015 11:48 PM

@grebnesieh: Chef says that as you can see game can take even large number of turns . So currently he is just playing this game with his mom and as soon as game will finish he will contact you for your cake :D .

chiriacandrei @ 5 Jan 2015 01:28 AM

I love the prolem's statement. I'd love more lovely statements and shorter also, just like this. :D

ma5termind @ 5 Jan 2015 02:47 AM

@chiriacandrei: Chef says thanks.

arindam168 @ 5 Jan 2015 04:17 PM

Good question and innovative problem statement, really enjoyed solving this.

prastut @ 5 Jan 2015 05:50 PM

I scored a full 100 in this problem but my score on the ranklist,for this problem,is being dispalyed as 30!! It was all okay a day before..Please look into this.(Note:My submission(ID-5749426) still shows 100 points) :(

n1n1_4 @ 5 Jan 2015 09:13 PM

Thanks @ma5termind for such interesting problem

Need help? Post a comment. But before that please spare a moment to read the guidelines.

Your name:
henviso

Comment: *

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Directi
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The time now is: 10:25:15 AM
Your Ip: 199.36.244.25

CodeChef - A Platform for Aspiring Programmers

CodeChef was created as a platform to help programmers make it big in the world of algorithms, **computer programming** and **programming contests**. At CodeChef we work hard to revive the geek in you by hosting a **programming contest** at the start of the month and another smaller programming challenge in the middle of the month. We also aim to have training sessions and discussions related to **algorithms**, **binary search**, technicalities like **array size** and the likes. Apart from providing a platform for **programming competitions**, CodeChef also has various algorithm tutorials and forum discussions to help those who are new to the world of **computer programming**.

Practice Section - A Place to hone your 'Computer Programming Skills'

Try your hand at one of our many practice problems and submit your solution in a language of your choice. Our **programming contest** judge accepts solutions in over 35+ programming languages. Preparing for coding contests were never this much fun! Receive points, and move up through the CodeChef ranks. Use our practice section to better prepare yourself for the multiple **programming challenges** that take place through-out the month on CodeChef.

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Here is where you can show off your **computer programming** skills. Take part in our 10 day long monthly **coding contest** and the shorter format Cook-off **coding contest**. Put yourself up for recognition and win great prizes. Our **programming contests** have prizes worth up to Rs.20,000 and \$700! lots more CodeChef goodies up for grabs.

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Are you new to **computer programming**? Do you need help with algorithms? Then be a part of CodeChef's Forums and interact with all our programmers - they love helping out other programmers and sharing their ideas. Have discussions around **binary search**, **array size**, **branch-and-bound**, **Dijkstra's algorithm**, **Encryption algorithm** and more by visiting the CodeChef Forums and Wiki section.

CodeChef Community

As part of our Educational initiative, we give institutes the opportunity to associate with CodeChef in the form of Campus Chapters. Hosting **online programming competitions** is not the only feature on CodeChef. You can also host a **coding contest** for your institute on CodeChef, organize an **algorithm** event and be a guest author on our blog.

Go For Gold

The Go for Gold Initiative was launched about a year after CodeChef was inceptioned, to help prepare Indian students for the **ACM ICPC** World Finals competition. In the run up to the **ACM ICPC** competition, the Go for Gold initiative uses CodeChef as a platform to train students for the **ACM ICPC** competition via multiple warm up contests. As an added incentive the Go for Gold initiative is also offering over Rs.8 lacs to the Indian team that beats the 29th position at the **ACM ICPC** world finals. Find out more about the Go for Gold and the **ACM ICPC** competition [here](#).