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## Chef and calculation

Problem code: RESCALC

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Every Friday Chef and his  $N - 1$  friends go for a party. At these parties, they play board games. This Friday, they are playing a game named "Boats! Boats! Boats!". In this game players have to transport cookies between Venice and Constantinople. Each player has a personal storage. The players are numbered from 1 to  $N$ , Chef is numbered 1. Rules for determining a winner are very difficult, therefore Chef asks you to write a program, which will determine who is a winner.

There are 6 types of cookies. For each cookie in the storage player gets 1 point. Also player gets additional points if he packs his cookies in some boxes as follows:

- A box containing 4 different types of cookies fetches 1 additional point.
- A box containing 5 different types of cookies fetches 2 additional points.
- A box containing 6 different types of cookies fetches 4 additional points.

Obviously a cookie can be put into a single box.

For each player, you know the number of cookies in his storage (denoted by  $c[i]$ ), also the types of cookies in the storage given denoted by  $type[i][j]$ .

Your task is to determine the winner of this game. Output "tie" if there are two or more players with same maximum score, "chef" if only Chef has a maximum score, winner's index in all other cases.

### Input

The first line of input contains a single integer  $T$  denoting the number of test cases. This will be followed by  $T$  test cases.

The first line of each test case contains an integer  $N$  denoting the number of players.

The second line of each test case contains an integer  $c[i]$  denoting the number of cookies in the  $i$ -th storage, followed by  $c[i]$  space-separated integers  $type[i][j]$  which denote the type if  $j$ -th cookie in the storage  $i$ -th.

### Output

For each test case, output a single line containing the answer as specified in the statement.

### Constraints and Subtasks

Subtask #1 : (20 points)

- $1 \leq T \leq 10$
- $1 \leq N \leq 100$
- $1 \leq c[i] \leq 100$
- $1 \leq type[i][j] \leq 3$

Subtask #2 : (80 points)

- $1 \leq T \leq 10$
- $1 \leq N \leq 100$
- $1 \leq c[i] \leq 100$
- $1 \leq type[i][j] \leq 6$

### Example

Input:

```
3
2
6 1 2 3 4 5 6
9 3 3 3 4 4 4 5 5 5
2
5 2 3 4 5 6
7 1 1 2 2 3 3 4
3
4 1 1 2 3
4 1 2 2 3
4 1 2 3 3
```

Output:

```
chef
2
tie
```

### Explanation

Example case 1.

Chef has total 6 cookie, so he gets 6 points for that. Also, he can put all his cookies (as they are all distinct) in a bag of size 6. It will fetch him additional 4 points. So, Chef's total points will be 10.

in a bag of size 5, it can contain minimum 4 points, so, there can't be points less than 4.

The second player has 9 cookies, he gets 9 points for that. Other than this, he can't create a bag with either 4, 5 or 6 distinct cookies. So, his final score is 9.

$10 > 9$  - Chef wins.

#### Example case 2.

Chef has  $5 + 2$  (a bag with 5 different cookies) = 7.

The second player has  $7 + 1$  (a bag with 4 different cookies) = 8.

$7 < 8$  - the second player wins.

#### Example case 3.

Every player has 4 cookies and can't create any bag of sweets. So, it's a tie.

Author: omelyanenko

Tester: dpraveen\_admin

Date Added: 26-07-2016

Time Limit: 0.5 sec

Source Limit: 50000 Bytes

Languages: ADA, ASM, BASH, BF, C, C99 strict, CAML, CLOJ, CLPS, CPP 4.3.2, CPP 4.9.2, CPP14, 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, PYPY, PYTH, PYTH 3.4, RUBY, SCALA, SCM chicken, SCM guile, SCM qobi, ST, TCL, TEXT, WSPC

SUBMIT

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#### Help:

Supports **markdown**

Supports **@mention** e.g **@admin**

 Preview

Post

**vin3022** 6 hours ago

what should be the output for: 7 1 2 3 4 5 6 7 ..??

Reply 

**vin3022** 6 hours ago

I'm sorry for the typo, what should be the score for: 7 1 2 3 4 5 6 7 ..??

Reply 

**omelyanenko** 5 hours ago

This test isn't valid. Guaranteed that  $1 \leq \text{type}[i][j] \leq 6$ .

Reply 

**youssef29** 9 hours ago

I'm getting run time error on the last task, and SIGABRT when trying to assert ( $1 \leq \text{type}[i][j] \ \&\& \ \text{type}[i][j] \leq 6$ ).

Reply 

**omelyanenko** 7 hours ago

I have checked this, everything is fine. Check your code, maybe an order of reading is wrong.

Reply 

**youssef29** 6 hours ago

Yes, it is my fault, it was a silly mistake :D Thanks for your concern and sorry for the inconvenience.

Reply 

**shivangnlucky** 13 hours ago

what will be the score for a player having following cookies?? 15 1 1 1 2 2 3 3 3 4 4 4 5 5 6

Reply 

**omelyanenko** 10 hours ago

It will be  $15 + 4(1 \times 4) + 2(1 \times 2) + 1(1 \times 1) = 22$ .

Reply ↩

**nikunj30** 2 days ago

getting an NZEC in last subtask task 4. using python2 checked all related to nzech in stakcoverflow,discussCodechef,nothing to my relevance. plz help if you can.

Reply ↩

**codede0111** 3 days ago

Not reading this line carefully made me submit a lot of WA's. Output "tie" if there are two or more players with same maximum score. Finally AC ! :D

Reply ↩

**kakliya\_adi** 10 hours ago

If any two players have same score but that is not maximum then is it a tie or not?

Reply ↩

**omelyanenko** 5 hours ago

No, it's not a tie.

Reply ↩

**heya\_all** 3 days ago

12 3 3 3 4 4 4 5 5 5 6 6 6

For this case will the points be  $12+3*1=15$ ?

Reply ↩

**omelyanenko** 3 days ago

Yes, It will be 15.

Reply ↩

**ruskinmanku** 2 days ago

Can you tell me why it will be  $3*1$  ?.....is it so because he can make 3 bags ?

Reply ↩

**omelyanenko** a day ago

Yes, It's because he can make 3 bags with 4 cookies.

Reply ↩

**kapilmatani** 4 days ago

If suppose we have 16 numbers 1 and 2 twice, 3 4 5 and 6 thrice So our ans would be  $16 + 2*4 + 11$  or  $16 + 4*2$  or  $16 + 4$  ??

Reply ↩

**omelyanenko** 3 days ago

Answer is  $16 + 4*2(8) + 1*1(1) = 25$ .

Reply ↩

**revanth\_97** 4 days ago

when I submit it shows wrong answer for subtask 2, task 3, task 4, what does that mean? and one more doubt is what if user enters `type[i][j]` which doesn't belong to `[1,6]`, should the program exit or just the current test case must exit? if current test case exits what should the output be, chef or tie or winner's index? @admin

Reply ↩

**omelyanenko** 3 days ago

It means that your program writes wrong answer for testcases. Guaranteed that  $1 \leq \text{type}[i][j] \leq 6$ .

Reply ↩

**vijayair01** 5 days ago

if there are more than 6 different types of cookies. can he make two bags?

Reply ↩

**vijayair01** 5 days ago

like 1,1,2,2,3,4,3,4,5,6,5,6 can he make 2 bags 123456 and 123456 each

Reply ↩

**omelyanenko** 3 days ago

Yes, he can. The answer for this testcase is  $12 + 8(4*2) = 20$ .

Reply ↩

**drexon\_raid** 5 days ago

Can we assume that the types are given sorted ?

Reply ↩

**omelyanenko** 3 days ago

No, you can't.

Reply ↩

**ullahzaid** 5 days ago

what if there are two winners?

Reply ↩

**omelyanenko** 3 days ago

"Output "tie" if there are two or more players with same maximum score."

Reply ↩

**patrick\_silva** 5 days ago

what would be answer for this case? 12 1 2 3 4 5 6 1 2 3 4 5 6

12+4 or 12+4+4

Reply ↩

**omelyanenko** 3 days ago

12 + 4 + 4

Reply ↩

**dinesh123bhai** 6 days ago

"Output "tie" if there are two or more players with same maximum score," what does this mean??? for eg in the test case 3 if the input is 3 4 1 1 2 3 4 1 2 2 3 6 1 2 3 4 5 6

will it be tie???

Reply ↩

**omelyanenko** 3 days ago

No, the answer is 3. Third player has more points than first and second.

Reply ↩

**zehra123** 6 days ago

Can player create multiple bag of different cookies?? Suppose after creating a bag of 6 distinct cookies if there are still remaining cookies by which other bag can be created of 5 or 4 distinct cookies?

Reply ↩

**omelyanenko** 3 days ago

Yes, they can.

Reply ↩

**parthendo** 7 days ago

suppose a player has 1 2 3 4 5 6 1 2 3 4 5 6 cookies in the storage, so what would be his points 4 or 8?

Reply ↩

**omelyanenko** 3 days ago

It would be 20. 12 cookies + 8(4X2).

Reply ↩

**animi\_murali** 7 days ago

will the cookie numbers jumble? like in the example 6 1 2 3 4 5 6 can the input contain these values: 6 5 6 1 2 3 4?

Reply ↩

**omelyanenko** 3 days ago

Yes, it can be.

Reply ↩

**phantomhive** 8 days ago

Sub-Task Task # Score Result (time) 1 1 NA AC (0.020000) 1 2 NA AC (0.020000) Final Score - 20.000000 Result - AC 2 0 NA AC (0.000000) 2 3 NA WA (0.020000) 2 4 NA WA (0.020000) Final Score - 0.000000 Result - WA

does this mean my code is wrong for the big input or did i exceed the time limit for big inputs and need to optimise the code?

Reply ↩

**omelyanenko** 3 days ago

It means that you code writes a wrong answer for second subtask.

Reply ↩

**ruhul1995** 9 days ago

@omelyanenko : how output for 2nd testcase is 2 ?? is it coz 2nd player wins??? plz reply

Reply ↩

**omelyanenko** 3 days ago

Yes, it is because player with number 2 has a maximum score in the game.

Reply ↩

**sampatghosh** 10 days ago

@admin is there any limit in no. of boxes ??

Reply ↩

**omelyanenko** 3 days ago

There isn't any limit.

Reply ↩

**meetparekh09** 10 days ago

@admin Is there a typo in the input section last line which mentions "type if j-th cookie in the storage i-th" shouldn't it be "type of j-th cookie in the storage i-th"?

Reply ↩

**omelyanenko** 3 days ago

Yes, it's a typo. It should be "type of j-th cookie in the storage i-th".

Reply ↩

**vishnuhdadhich** 10 days ago

Lets suppose chef has: 8,1,2,3,4,1,2,3,4 what should be his points ? 9 or 10 ?

Reply ↩

**omelyanenko** 3 days ago

It should be 10.

Reply ↩

**xvetox** 11 days ago

What do we output when someone has the same score as chef which is also the maximum score ?

Reply ↩

**omelyanenko** 3 days ago

You have to write "tie".

Reply ↩

**rohitangira** 11 days ago

question is poorly framed their can be more then 6 types of cookies.... @admin

Reply ↩

**omelyanenko** 3 days ago

No, it can't be more than 6. Guaranteed that  $1 \leq \text{type}[i][j] \leq 6$ .

Reply ↩

**bajjoo** 11 days ago

What if two win?

Reply ↩

**bajjoo** 11 days ago  
@dpraveen\_admin 2 out of 3 win

Reply ↩

**omelyanenko** 3 days ago  
it's a tie.

Reply ↩

---

**dibya1rb12\_3** 11 days ago  
For a case of 3 players with score 6 10 10

Do I need to print the indexes of winning score as space separated format?

Reply ↩

**omelyanenko** 3 days ago  
You have to print "tie".

Reply ↩

---

**ghamandipp** 11 days ago  
@admin @omelyanenko @dpraveen\_admin what `t[i][j]` signifies. i'm not getting

Reply ↩

**omelyanenko** 3 days ago  
`Type[i][j]` is a type of j-th cookie in the storage with number i. The storage with number i belongs to the player with number i.

Reply ↩

---

**amitg87** 11 days ago  
In example 3 - all players have 4 cookies - so each gets 4 points. No boxes - so no bonus and a tie. Right?

Reply ↩

**omelyanenko** 3 days ago  
Right.

Reply ↩

---

**adijimmy** 11 days ago  
What to print if Chef is only playing the game ?

Reply ↩

**omelyanenko** 3 days ago  
chef

Reply ↩

---

**saeedjassani** 11 days ago  
is it possible that a player gets 10 different types of cookies?

Reply ↩

**omelyanenko** 3 days ago  
Guaranteed that  $1 \leq \text{type}[i][j] \leq 6$ .

Reply ↩

---

**abhi008** 11 days ago  
if we consider this 12 3 3 3 4 4 4 5 5 5 6 6 6

for this case total points should be 15? 12 for the cookies and 3 for the 3 groups of "3 4 5 6". Please correct me if I am wrong.

Reply ↩

**omelyanenko** 3 days ago  
Yes, it should be 15.

Reply ↩

---

**vicennial** 11 days ago

Do the players have infinite amount of bags to pack the cookies in? For eg if chef has 1 1 2 2 3 3 4 4 cookies in his bag, does he get an additional of 1 point or 2 points( 2 points because he can pack 2 bags which contain 1 2 3 4 type cookies each) ?

Reply ↩

**omelyanenko** 3 days ago

Yes, they have infinite amount of bags.

Reply ↩

**saaket1996** 11 days ago

can there be multiple bags for each player like 1 1 1 2 2 3 3 3 4 4 4 5 5 6 here he can create one bag of 6cookies another 2 bag of 5 cookies so his total point will be  $16 + (14) + (22) = 24$  or  $(16 + 4) = 20$

Reply ↩

**omelyanenko** 3 days ago

It will be  $16 + 4(1 \times 4) + 4(2 \times 2) = 24$ .

Reply ↩

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