

Qualification Round 2012

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- B. Dancing With the Googlers**
- [C. Recycled Numbers](#)
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Submissions	
Speaking in Tongues	
15pt	Not attempted 17356/19464 users correct (89%)
Dancing With the Googlers	
10pt	Not attempted 12384/13899 users correct (89%)
10pt	Not attempted 10762/12138 users correct (89%)
Recycled Numbers	
10pt	Not attempted 11747/12327 users correct (95%)
15pt	Not attempted 6811/10604 users correct (64%)
Hall of Mirrors	
15pt	Not attempted 551/879 users correct (63%)
25pt	Not attempted 184/259 users correct (71%)

Top Scores	
hos.lyric	100
qnighy	100
DjinnKahn	100
levlam	100
iwiskimo	100
mystic	100
TripleM	100
aleksey	100
royf	100
krijgertje	100

Problem B. Dancing With the Googlers

This contest is open for practice. You can try every problem as many times as you like, though we won't keep track of which problems you solve. Read the [Quick-Start Guide](#) to get started.

Small input
10 points

Download B-small.in

your output file: Choose File No file chosen

source file(s): not needed for the practice contest

Submit file Hide

Large input
10 points

Download B-large.in

your output file: Choose File No file chosen

source file(s): not needed for the practice contest

Submit file Hide

Problem

You're watching a show where Googlers (employees of Google) dance, and then each dancer is given a *triplet of scores* by three judges. Each triplet of scores consists of three integer scores from 0 to 10 inclusive. The judges have very similar standards, so it's *surprising* if a triplet of scores contains two scores that are 2 apart. No triplet of scores contains scores that are more than 2 apart.

For example: (8, 8, 8) and (7, 8, 7) are not surprising. (6, 7, 8) and (6, 8, 8) are surprising. (7, 6, 9) will never happen.

The *total points* for a Googler is the sum of the three scores in that Googler's triplet of scores. The *best result* for a Googler is the maximum of the three scores in that Googler's triplet of scores. Given the total points for each Googler, as well as the number of surprising triplets of scores, what is the maximum number of Googlers that could have had a best result of at least *p*?

For example, suppose there were 6 Googlers, and they had the following total points: 29, 20, 8, 18, 18, 21. You remember that there were 2 surprising triplets of scores, and you want to know how many Googlers could have gotten a best result of 8 or better.

With those total points, and knowing that two of the triplets were surprising, the triplets of scores could have been:

10	9	10
6	6	8 (*)
2	3	3
6	6	6
6	6	6
6	7	8 (*)

The cases marked with a (*) are the surprising cases. This gives us 3 Googlers who got at least one score of 8 or better. There's no series of triplets of scores that would give us a higher number than 3, so the answer is 3.

Input

The first line of the input gives the number of test cases, *T*. *T* test cases follow. Each test

case consists of a single line containing integers separated by single spaces. The first integer will be **N**, the number of Googlers, and the second integer will be **S**, the number of surprising triplets of scores. The third integer will be **p**, as described above. Next will be **N** integers **t_i**; the total points of the Googlers.

Output

For each test case, output one line containing "Case #x: y", where x is the case number (starting from 1) and y is the maximum number of Googlers who could have had a best result of greater than or equal to **p**.

Limits

$1 \leq T \leq 100$.

$0 \leq S \leq N$.

$0 \leq p \leq 10$.

$0 \leq t_i \leq 30$.

At least **S** of the **t_i** values will be between 2 and 28, inclusive.

Small dataset

$1 \leq N \leq 3$.

Large dataset

$1 \leq N \leq 100$.

Sample

Input	Output
4	Case #1: 3
3 1 5 15 13 11	Case #2: 2
3 0 8 23 22 21	Case #3: 1
2 1 1 8 0	Case #4: 3
6 2 8 29 20 8 18 18 21	

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