

Round 3 2011

[A. Irregular Cakes](#)**B. Dire Straights**[C. Perpetual Motion](#)[D. Mystery Square](#)[Contest Analysis](#)[Questions asked](#)

Submissions

Irregular Cakes

7pt	Not attempted 365/378 users correct (97%)
7pt	Not attempted 347/365 users correct (95%)

Dire Straights

4pt	Not attempted 338/374 users correct (90%)
12pt	Not attempted 267/315 users correct (85%)

Perpetual Motion

5pt	Not attempted 209/218 users correct (96%)
24pt	Not attempted 91/99 users correct (92%)

Mystery Square

10pt	Not attempted 317/342 users correct (93%)
31pt	Not attempted 1/46 users correct (2%)

Top Scores

linguo	84
nika	69
winger	69
zyz915	69
misof	69
andrewzta	69
rng..58	69
mystic	69
ACRushTC	69
natalia	69

Problem B. Dire Straights

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
4 points

[Solve B-small](#)

Large input
12 points

[Solve B-large](#)

Problem

You are playing a card game, where each card has an integer number written on it.

To play the game, you are given some cards — your *hand*. Then you arrange the cards in your hand into *straights*. A straight is a set of cards with consecutive values; e.g. the three cards {3, 4, 5}, or the single card {7}. You then receive a number of dollars equal to the length of the shortest straight. If you have no cards, you can form no straights, so you get zero dollars.

You will be given a series of test cases, each of which describes the cards you will have in your hand. Find the maximum number of dollars you can receive for each test case.

Input

The first line of the input contains the number of test cases, **T**. Each test case consists of one line. Each line contains **N**, the number of cards in your hand, followed by **N** integers giving the numbers on those cards. These numbers are all space-separated.

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 dollars you can receive.

Limits

 $1 \leq T \leq 100$

The numbers on the cards are between 1 and 10000.

Small dataset

 $0 \leq N \leq 10$

Large dataset

 $0 \leq N \leq 1000$

Sample

Input	Output
4	Case #1: 10
10 1 2 3 4 5 10 9 8 7 6	Case #2: 4
8 101 102 103 104 105 106 103 104	Case #3: 0
0	Case #4: 1
5 1 2 3 4 9	

In case 1, you have ten cards numbered 1 to 10, so you make one straight of length 10, and get 10 dollars.

In case 2, you could make two straights {101,102,103,104,105,106} and {103,104} and get 2 dollars. But it would be better to make {101,102,103,104} and {103,104,105,106} and get 4 dollars.

In case 4, the card with the number 9 must be in a straight containing only that card. So you get 1 dollar.

In case 3, you have zero cards, so you get zero dollars. You don't get money for nothing.

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