code jam
to i/o for women

Practice Mode

Code Jam to I/O 2016 for Women

- Submissions

Cody's Jams

10pt	Not attempted **353/478 users** correct (74%)
10pt	Not attempted **323/346 users** correct (93%)

Dance Around The Clock

10pt	Not attempted **270/304 users** correct (89%)
15pt	Not attempted **98/246 users** correct (40%)

Polynesiaglot

5pt	Not attempted **164/201 users** correct (82%)
10pt	Not attempted **126/152 users** correct (83%)
10pt	Not attempted **110/123 users** correct (89%)

Password Security

10pt	Not attempted **140/173 users** correct (81%)
20pt	Not attempted **27/106 users** correct (25%)

- Top Scores

Stacy992	100
shhuang	100
xeina	100
Javanochka	100
sim3995	100
Leylaa	100
nnetogrof	100
WYOCMWYH	100
Devushka	100

Problem A. Cody's Jams

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 A-small-practice.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 A-large-practice.in

your output file: Choose File No file chosen

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

Submit file Hide

Problem

Cody, the owner of the legendary Cody's Jams store, is planning a huge jam sale. To make things simple, he has decided to sell every item in his store at a 25% discount — that is, each item's sale price is exactly 75% of its regular price. Since all of his regular prices happened to be integers divisible by four, his sale prices are conveniently also all integers.

To prepare for the sale, he placed an order to print new labels for all of his items at their sale prices. He also placed an order to print new labels for all of his items at their regular prices, to use once the sale is over.

Cody just came back from picking up his order. Unfortunately, the printer gave him both orders in one combined stack, sorted by price. Both the sale price and the regular price label for each item are present somewhere in the stack. However, both types of labels look the same, and since he does not remember the price of every item, he is not sure which labels are the sale price labels. Can you figure that out?

For instance, if the regular prices were 20, 80, and 100, the sale prices would be 15, 60, and 75, and the printer's stack would consist of the labels 15, 20, 60, 75, 80, and 100.

Input

The first line of the input gives the number of test cases, **T**. **T** test cases follow. Each test case consists of two lines. The first line contains a single integer **N**, the number of items in Cody's store. The second line contains 2**N** integers $\mathbf{P_1}$, $\mathbf{P_2}$, ..., $\mathbf{P_{2N}}$ in non-decreasing order by the price printed on each label given by the printer.

Output

For each test case, output one line containing `Case #x: y`, where x is the test case number (starting from 1) and y is a list of **N** integers: the labels containing sale prices, in non-decreasing order.

Limits

$1 \leq \mathbf{T} \leq 100$.

KashinYana 100

$1 \le \mathbf{P_i} \le 10^9$, for all i.
$\mathbf{P_i} \le \mathbf{P_{i+1}}$, for all i. (The prices are in non-decreasing order.)
It is guaranteed that a unique solution exists.

Small dataset

$1 \le \mathbf{N} \le 4$.

Large dataset

$1 \le \mathbf{N} \le 100$.

Sample

Input	Output
2 3 15 20 60 75 80 100 4 9 9 12 12 12 15 16 20	Case #1: 15 60 75 Case #2: 9 9 12 15

Case #1 is the one described in the problem statement.

Notice in Case #2 that it is possible for multiple items to have the same price, and for an item to have a regular price that equals the sale price of another item.