

Cody's Jams

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 **2N** integers **P₁**, **P₂**, ..., **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

$1 \leq T \leq 100$.

Time limit: 20 seconds per test set.

Memory limit: 1GB.

$1 \leq P_i \leq 10^9$, for all *i*.

$P_i \leq P_{i+1}$, for all *i*. (The prices are in non-decreasing order.)

It is guaranteed that a unique solution exists.

Small dataset (Test set 1 - Visible)

$1 \leq N \leq 4$.

Large dataset (Test set 2 - Hidden)

$1 \leq N \leq 100$.

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.