Problem A. Maximise The Score

Time Limit 1000 ms
Mem Limit 262144 kB

There are $2n$ positive integers written on a whiteboard. Being bored, you decided to play a one-player game with the numbers on the whiteboard.

You start with a score of 0. You will increase your score by performing the following move **exactly** n times:

- Choose two integers x and y that are written on the whiteboard.
- Add $\min(x, y)$ to your score.
- Erase x and y from the whiteboard.

Note that after performing the move n times, there will be no more integers written on the whiteboard.

Find the maximum final score you can achieve if you optimally perform the n moves.

Input

Each test contains multiple test cases. The first line contains a single integer t ($1 \leq t \leq 5000$) — the number of test cases. The description of the test cases follows.

The first line of each test case contains a single integer n ($1 \leq n \leq 50$) — the number of integers written on the whiteboard is $2n$.

The second line of each test case contains $2n$ integers $a_1, a_2, \ldots, a_{2n}$ ($1 \leq a_i \leq 10^7$) — the numbers written on the whiteboard.

Output

For each test case, output the maximum final score that you can achieve.

Examples

Input	Output
3 1 2 3 2 1 1 2 1 3 1 1 1 1 1 1	2 2 3

Note

In the first test case, you can only make one move. You select $x = 2$ and $y = 3$, and your score will be $\min(x, y) = 2$.

In the second test case, the following is a sequence of moves that achieves a final score of 2:

- In the first move, select $x = 1$ and $y = 1$. Then, add $\min(x, y) = 1$ to the score. After erasing x and y, the integers left on the whiteboard are 1 and 2.
- In the second move, select $x = 1$ and $y = 2$. Then, add $\min(x, y) = 1$ to the score. After removing x and y, no more integers will be left on the whiteboard.

It can be proved that it is not possible to get a score greater than 2.

In the third test case, you will perform the move thrice, adding 1 to the score each time.