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PROBLEMS SUBMIT STATUS STANDINGS CUSTOM TEST

D. Three Activities

time limit per test: 2 seconds memory limit per test: 256 megabytes

Winter holidays are coming up. They are going to last for n days.

During the holidays, Monocarp wants to try all of these activities exactly once with his friends:

- · go skiing;
- · watch a movie in a cinema;
- · play board games.

Monocarp knows that, on the i-th day, exactly a_i friends will join him for skiing, b_i friends will join him for a movie and c_i friends will join him for board games.

Monocarp also knows that he can't try more than one activity in a single day.

Thus, he asks you to help him choose three **distinct** days x,y,z in such a way that the total number of friends to join him for the activities $(a_x + b_y + c_z)$ is maximized.

Input

The first line contains a single integer t ($1 \le t \le 10^4$) — the number of testcases.

The first line of each testcase contains a single integer $n (3 \le n \le 10^5)$ — the duration of the winter holidays in days.

The second line contains n integers a_1, a_2, \ldots, a_n $(1 \le a_i \le 10^8)$ — the number of friends that will join Monocarp for skiing on the i-th day.

The third line contains n integers b_1, b_2, \dots, b_n $(1 \le b_i \le 10^8)$ — the number of friends that will join Monocarp for a movie on the i-th day.

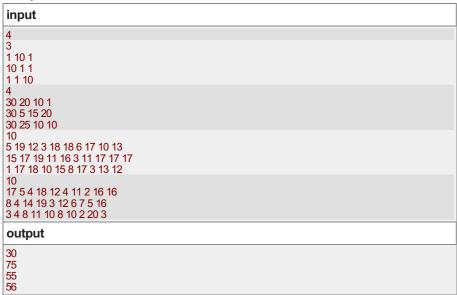
The fourth line contains n integers c_1, c_2, \dots, c_n $\left(1 \le c_i \le 10^8\right)$ — the number of friends that will join Monocarp for board games on the i-th day.

The sum of n over all testcases doesn't exceed 105.

Output

For each testcase, print a single integer — the maximum total number of friends that can join Monocarp for the activities on three distinct days.

Example



Note

In the first testcase, Monocarp can choose day 2 for skiing, day 1 for a movie and day 3 for board

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Finished







games. This way, $a_2=10$ friends will join him for skiing, $b_1=10$ friends will join him for a movie and $c_3=10$ friends will join him for board games. The total number of friends is 30.

In the second testcase, Monocarp can choose day $_1$ for skiing, day $_4$ for a movie and day $_2$ for board games. $_{30+20+25=75}$ friends in total. Note that Monocarp can't choose day $_1$ for all activities, because he can't try more than one activity in a single day.

In the third testcase, Monocarp can choose day $_2$ for skiing, day $_3$ for a movie and day $_7$ for board games. $_{19+19+17=55}$ friends in total.

In the fourth testcase, Monocarp can choose day $_1$ for skiing, day $_4$ for a movie and day $_9$ for board games. $_{17+19+20=56}$ friends in total.

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