Problem K. Best Carry Player 4

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	1024 megabytes

After learning elementary math, Little Cyan Fish has mastered the concept of carry[3], which is a digit that is transferred from one column of digits to another column of more significant digits.

carry	*1*		*1*	
		6	7	6
+		5	1	8
	1	1	9	4

Now, Little Cyan Fish gives two numbers A and B in the base m. For each number, you can permute its digits arbitrarily. After that, you will get two new numbers A' and B', and leading zeros are **allowed** here. What is the maximum number of carries when computing $A' + B'$ in the base m?

Input

There are multiple test cases in a single test file. The first line of the input contains a single integer T ($1 \le T \le 2 \times 10^5$), indicating the number of test cases.

For each test case, the first line contains one integer m ($2 \le m \le 5 \times 10^5$).

The second line contains m integers $a_0, a_1, \ldots, a_{m-1}$ ($0 \le a_i \le 10^9$). a_i indicates the number of occurrences of digit i in A.

The third line contains m integers $b_0, b_1, \ldots, b_{m-1}$ ($0 \le b_i \le 10^9$). b_i indicates the number of occurrences of digit i in B.

It is guaranteed that the sum of m over all test cases is no more than 5×10^5.

Output

For each test case, output one integer indicating the maximum number of carries.

[3]which means "进位" in Chinese

Example

standard input	standard output
5 2 1 2 3 4 3 1 0 1 0 1 0 4 1 0 0 1 1 1 1 1 5 123456 114514 1919810 233333 234567 20050815 998244353 0 0 0 10 5 3 5 3 2 4 2 4 1 5 9 9 8 2 4 4 3 5 3 0	5 1 2 467900 29