6700 Robin Hood Transformation

For a country A we can have some idea about the income distribution by setting a_1 equal to the percentage of total income which is received by the top 10% of income earners, setting a_2 equal to the percentage earned by the next 10%, and so on down to a_{10} which we set equal to the percentage of national income that is earned by the bottom 10% of earners. We set $\mathbf{a} = (a_1, \ldots, a_{10})$. If the vector $\mathbf{b} = (b_1, \ldots, b_{10})$ is similarly defined for country B, then the relation $\mathbf{a} \prec \mathbf{b}$ has an economic interpretation: income is more *unevenly* distributed in nation B than in nation A.

To characterize the relation $\mathbf{a} \prec \mathbf{b}$, we use *doubly stochastic matrix*, which is a type of square matrix of nonnegative real entries and each of its row sum and column sum equals 1. If $\mathbf{a} = D\mathbf{b}$ for some doubly stochastic matrix D, it makes the income distribution of nation B like nation A. That is, the redistribution of income by D simply draws on the philosophy of Robin Hood: one steals from the rich and gives to the poor! Therefore, the economical conditions of these two countries can be denoted as $\mathbf{a} \prec \mathbf{b}$.

Given two N-dimensional non-negative integer vectors $\mathbf{a}$ and $\mathbf{b}$ with $\sum_{i=1}^{N} a_i = \sum_{i=1}^{N} b_i$, we want to determine whether there exists a doubly stochastic matrix D satisfying $\mathbf{a} = D\mathbf{b}$. Your task is to write a program to determine it. If such a matrix exists, then output '`Yes`', else output '`No`'.

Technical Specification

1. K: the number of test cases. $K \leq 20$.
2. N: the length of input vector. $2 \leq N \leq 5000$.
3. Each non-negative integer is at most 100000.

Input

The first line of the input contains an integer K, denoting the number of test cases to follow. For each test case, there are three lines. The first positive integer N ($2 \leq N \leq 5000$) indicates the length of the integer vectors. Then two lines follow and each has N integers. The first line is for vector $\mathbf{a}$ and the second line is for vector $\mathbf{b}$, where integers are separated with space(s).

Note that $\sum_{i=1}^{N} a_i = \sum_{i=1}^{N} b_i$.

Output

For each test case, output '`Yes`', if the relation ($\prec$) holds between the two input vectors, else output '`No`'.

Sample Input

```
2
7
1 1 1 1 1 1 1
2 1 1 0 2 1 0
6
5 2 2 5 2 2
4 1 4 5 2 2
```

Sample Output

```
Yes
No
```