Count Arithmetic Progression

Input file:	standard input
Output file:	standard output
Time limit:	2 seconds
Memory limit:	1024 megabytes

You are given two sequences of integers $L = (L_1, L_2, \ldots, L_N)$ and $R = (R_1, R_2, \ldots, R_N)$, find the number of sequences $A = (A_1, A_2, \ldots, A_N)$ of integers that satisfy the following conditions, modulo 998244353:

- For all integers i such that $1 \le i \le N$, $L_i \le A_i \le R_i$ holds.

- Let $d = A_2 - A_1$. For all integers i such that $1 \le i \le N - 1$, $A_{i+1} - A_i = d$ holds.

Input

The input is given from Standard Input in the following format:

```
N
L_1 L_2 ⋯ L_N
R_1 R_2 ⋯ R_N
```

- All values in the input are integers.

- $2 \le N \le 3 \times 10^5$

- $1 \le L_i \le R_i \le 10^{12}$ $(1 \le i \le N)$

Output

Print the number of sequences A that satisfy the conditions, modulo 998244353.

Examples

standard input	standard output
3 5 5 2 7 6 7	6
4 2 3 1 6 5 6 4 8	0

Note

In the first example, there are 6 sequences that satisfy the conditions: $(5, 5, 5)$, $(5, 6, 7)$, $(6, 5, 4)$, $(6, 6, 6)$, $(7, 5, 3)$, $(7, 6, 5)$.