Problem L. Lines

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	256 mebibytes

Given are three arrays of $n+1$ integers: a, b, c.

We define $3n+1$ functions $F_0, F_1, \ldots, F_{3n}$ as follows:

$$F_i(t) = it + \max_{\substack{0 \le x,y,z \le n \\ x+y+z=i}} (a_x + b_y + c_z).$$

A function F_i is said to be **NeVeR_LosEs** if and only if there does not exist a real number t such that $F_i(t) > F_j(t)$ for all $j \neq i$.

Your task is to find out which functions can be called **NeVeR_LosEs**.

Input

The first line contains an integer n ($1 \le n \le 3 \cdot 10^5$).

The second line contains the array $a_0, a_1, \ldots, a_n$ ($0 \le a_i \le 10^9$).

The third line contains the array $b_0, b_1, \ldots, b_n$ ($0 \le b_i \le 10^9$).

The fourth line contains the array $c_0, c_1, \ldots, c_n$ ($0 \le c_i \le 10^9$).

Output

On the first line, print an integer m, the number of functions that can be called **NeVeR_LosEs**.

On the second line, print m integers $0 \le i_1 \le \ldots \le i_m \le 3n$, the indices of these functions in ascending order.

Examples

standard input	*standard output*
3 3 1 8 7 9 1 3 1 5 1 1 6	5 1 3 4 7 8
1 1 2 1 2 1 2	2 1 2