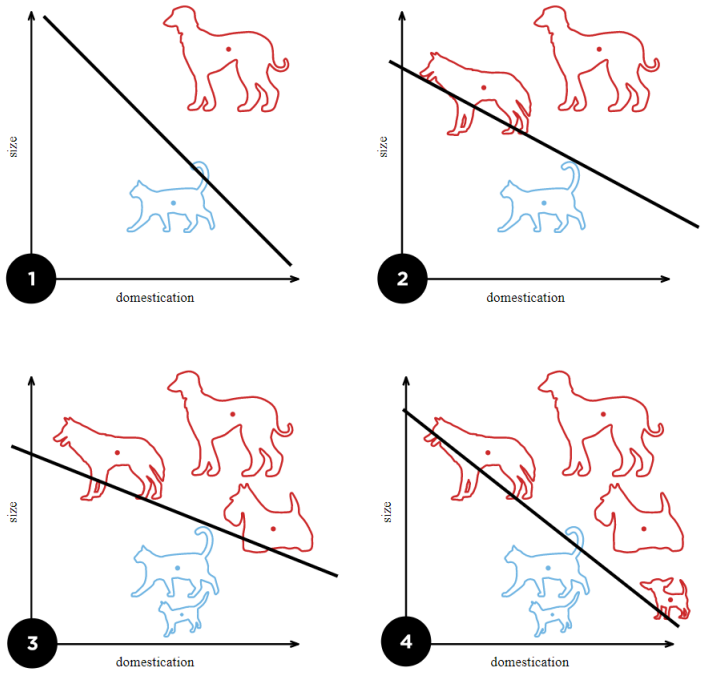
Finding a Sample

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

In machine learning, the perceptron is an algorithm for supervised learning of binary classifiers. A binary classifier is a function that can decide whether or not an input, represented by a vector of numbers, belongs to some specific class. It is a type of linear classifier, i.e. a classification algorithm that makes its predictions based on a linear predictor function combining a set of weights with the feature vector.



A diagram showing the training process of a perceptron. Source: Wikipedia, CC BY-SA 4.0.

In the modern sense, the perceptron is an algorithm for learning a binary classifier called a threshold function: a function that maps its input $\mathbf{x}$ (a real-valued vector) to an output value $f(\mathbf{x})$:

$$f(\mathbf{x}) = sign(\mathbf{w} \cdot \mathbf{x} + b)$$

$$sign(x) = \begin{cases} -1 & x < 0 \\ 0 & x = 0 \\ 1 & x > 0 \end{cases}$$

where $\mathbf{w}$ is a vector of real-valued weights, $\mathbf{w} \cdot \mathbf{x}$ is the dot product $\sum_{i=1}^{m} w_i x_i$, where m is the number of inputs to the perceptron, and b is the bias. The bias shifts the decision boundary away from the origin and does not depend on any input value.

Now, you have two perceptrons f_1 and f_2. You want to find a sample $\mathbf{x}$ that makes the classification results of the two perceptrons different. Formally, this means $f_1(\mathbf{x}) \cdot f_2(\mathbf{x}) < 0$.

Input

The input contains multiple cases. The first line of the input contains a single positive integer T ($1 \leq T \leq 10$), the number of cases.

For each case, the first line of the input contains a single integer N ($1 \leq N \leq 200$), the number of inputs to the perceptron. The second line contains $N+1$ integers , where the i-th ($1 \leq i \leq n$) integer denotes w_i, and the last integer denotes b, of the first perceptron. The third line contains $N+1$ integers describing the second perception in the same format as the first.

It is guaranteed that the parameters (w_i and b) of the perceptrons are all integers in the range $[-100, 100]$.

Output

For each case, if there is at least one sample satisfying the requirements, output one such sample. Print a single line containing N real numbers, where the i-th ($1 \leq i \leq N$) number denotes x_i of the sample. If not, print a single string "`No`" (without quotes).

Please note that each number you output must be in the range $[-10000, 10000]$. Also, it should have no more than 11 decimal places, otherwise your solution may not be accepted even if it is correct, due to the limited precision of the checker program (Generally, you should try to print as few decimal places as possible to avoid precision issues. The checker program is written in C++ and uses the `double` data type). It is guaranteed that if a solution exists, there is a solution that meets the conditions above.

Example

standard input	standard output
2 2 1 -1 1 1 -1 -1 2 1 -1 0 2 -2 0	0 0 No