

482 Permutation Arrays

In many computer problems, it is necessary to permute data arrays. That is, the data in an array must be re-arranged in some specified order. One way to permute arbitrary data arrays is to specify the permutations with an index array. Let x be an array that is to be permuted and let x' be the permuted array. Then, we have the relationship between x and x' that $x'_i = x_{p_i}$.

Input

The input file will contain two lines of numbers. The first line will be an index array containing the integers $1 \dots n$, where n is the number of integers in the list. The numbers in the first line will have been permuted in some fashion. The second line will contain a list numbers in floating point format.

Output

The output for this program will be the list of floating point numbers from the input file, ordered according to the permutation array from the input file. The output numbers must be printed one per line in the same format in which they each appeared in the input file.

Sample Input

```
3 1 2
32.0 54.7 -2
```

Sample Output

```
-2
32.0
54.7
```