Security - Permutations

Problem Statement

Consider a function $f : X \to X$ where X is any set. If f is a bijection then f is a permutation function of X. There is nothing special about the set X hence it can be replaced by the set $\{1, 2, 3, \ldots, n\}$ where $n = |X|$.

Consider a permutation f given by $(2, 3, 1)$ this means that $f(1) = 2$, $f(2) = 3$ and $f(3) = 1$.

In this task you'll be given a permutation $f : \{1, 2, 3, \ldots, n\} \to \{1, 2, 3, \ldots, n\}$ and you have to output $f(f(x))$ for all $x \in \{1, 2, 3, \ldots, n\}$.

Constraints:

$1 \leq n \leq 20$

Input Format

There are 2 lines in the input. The first line contains a single positive integer n. The second line contains n space separated integers, the values of $f(1),\ f(2),\ f(3),\ \ldots,\ f(n)$ respectively.

Output Format

Output the values of $f(f(1)),\ f(f(2)),\ f(f(3)),\ \ldots,\ f(f(n))$ respectively, each in a new line.

Sample Input

```
3
2 3 1
```

Sample Output

```
3
1
2
```

Explanation

$f(f(1)) = f(2) = 3$ and so on.