Security Permutations

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. 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're given a permutation $f : \{1, 2, 3, \ldots, n\} \to \{1, 2, 3, \ldots, n\}$.

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

On separate lines, output the values of $f(f(1)), f(f(2)), f(f(3)), \ldots, f(f(n))$, respectively.

Sample Input

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3
2 3 1
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Sample Output

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3
1
2
```

Explanation

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