You are given an **integer** array pref of size n. Find and return *the array* arr *of size* n *that satisfies*:

* pref[i] = arr[0] ^ arr[1] ^ ... ^ arr[i].

Note that ^ denotes the **bitwise-xor** operation.

It can be proven that the answer is **unique**.

**Example 1:**

Input: pref = [5,2,0,3,1]  
Output: [5,7,2,3,2]  
Explanation: From the array [5,7,2,3,2] we have the following:  
- pref[0] = 5.  
- pref[1] = 5 ^ 7 = 2.  
- pref[2] = 5 ^ 7 ^ 2 = 0.  
- pref[3] = 5 ^ 7 ^ 2 ^ 3 = 3.  
- pref[4] = 5 ^ 7 ^ 2 ^ 3 ^ 2 = 1.

**Example 2:**

Input: pref = [13]  
Output: [13]  
Explanation: We have pref[0] = arr[0] = 13.

**Constraints:**

* 1 <= pref.length <= 105
* 0 <= pref[i] <= 106