B Tree

Description

B-tree is a generalization of a binary search tree in that a node can have more than two children. Although B-tree is powerful, it's not our topic today. We'll focus on β-tree.

β-tree is a binary tree in which all leaves have the same level. Every node in the tree has either 0 or 2 children. If we are given a level k to a β-tree. We can definitely know that it has exactly $2^k - 1$ nodes. Each node of β-tree contains a distinct number between $[1, 2^k - 1]$. For each pair of nodes connect with an edge, the numbers of them are coprime.

Actually we can index a β-tree in order. Let the root of β-tree has an index of 1. If there is an internal node has an index of i, then the left child of the node has an index of $2i$ and the right child of the node has an index of $2i + 1$.

Now we are given k. Can you assign each node a distinct number to construct a β-tree with level k?

Input

The first line contains an integer T indicating the total number of test cases. Each test case contains one line with one integer k.

- $1 \le T \le 20$
- $1 \le k \le 20$

Output

For each test case, please output the numbers contained in each node in order.

Sample Input

```
2
2
3
```

Sample Output

```
1 2 3
1 7 5 2 3 4 6
```