Subset Generation

You are given an integer n

, generate all subsets of the first n

natural numbers.

Print the subsets sorted according to the maximum value present in them. If two subsets contain the same maximum value, then compare the second maximum value, if that is same then the third and so on. The empty subset is always printed first and considered lesser than all other subsets.

Input

First line contains a single integer T

, the number of testcases, T

testcases follow

Each testcase contains a single integer, n

Output

For each testcase output 2^n

lines, each line containing a set of increasing space separated integers, in the specified order, denoting the subsets generated.

Constraints

$1 \leq T \leq 10$

$1 \leq n \leq 10$

Sample Input

```
2
2
4
```

Sample Output

```
1
2
1 2

1
2
1 2
3
1 3
2 3
1 2 3
4
1 4
2 4
1 2 4
```

```
3 4
1 3 4
2 3 4
1 2 3 4
```

Explanation

All the subsets are printed in the required order