Truth Table

Logic gate is one of the important components in digital system. There are different types of gates. One of the interesting things is that whatever the type of the gate is the input combination will be the same. The output combination differs from gate to gate. For example let us consider the following gates

OR Gate					AND Gate					NAND Gate			
A	B	C	X		A	B	C	X		A	B	C	X
0	0	0	0		0	0	0	0		0	0	0	1
0	0	1	1		0	0	1	0		0	0	1	1
0	1	0	1		0	1	0	0		0	1	0	1
0	1	1	1		0	1	1	0		0	1	1	1
1	0	0	1		1	0	0	0		1	0	0	1
1	0	1	1		1	0	1	0		1	0	1	1
1	1	0	1		1	1	0	0		1	1	0	1
1	1	1	1		1	1	1	1		1	1	1	0

On the above example the input combination (A, B, C) are the same. The output combinations differs (here X is the output).

As a programmer write a program that will take number of input variables as input and show their input combinations as output.

Input:

Input starts with an integer **T (≤ 100)**, denoting the number of test cases.

For each test case, program takes one integer N (1<=N<=3) that means total number of input for a particular Gate.

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Output:

For each test case, print the case number and input combinations as output.

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Sample Input/Output:

Sample Input	Sample Output
2 2 3	Case 1: 00 01 10 11 Case 2: 000 001 010 011 100 101 110