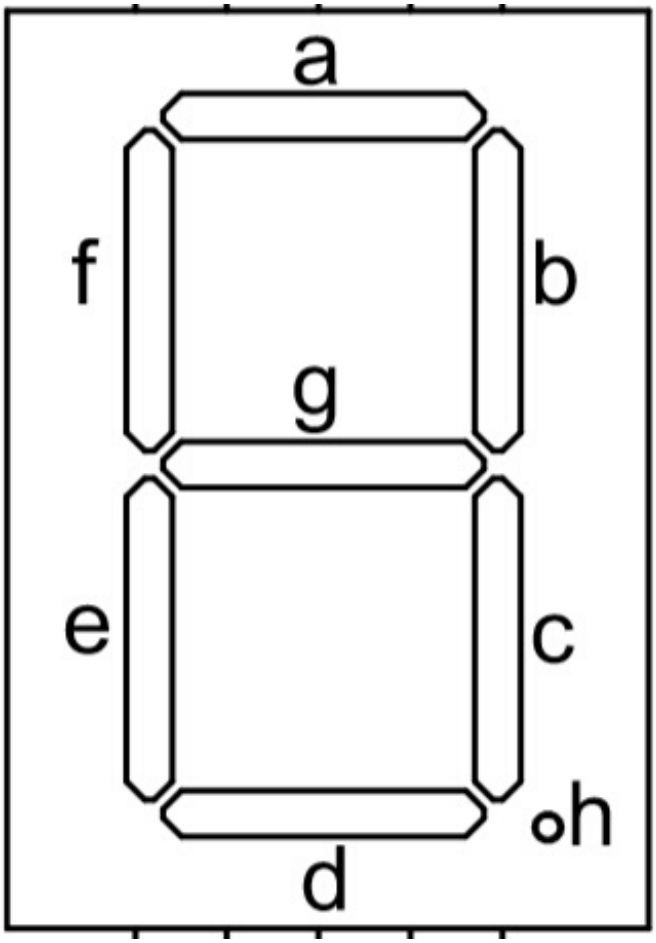
Lord of Light

Nobel the Littlefinger is a follower of Lord of Light. So he likes **7-segment display** so much because that works with LED lights.

This is a model of **7-segment display**.



And this is how it works.

There are 7 LED light in a 7-segment Display. These are **a, b, c, d,e, f, g**.

We can display any digit from 0 to 9 with these lights.

For example, when **a, b, g, c, d** lights are on that means **3** is displayed.

When **a, f, e, d, c, g** lights are on that means **6** is displayed.

This way **0, 1, 2, 3, 4, 5, 6, 7, 8, 9** can be displayed with a 7-segment Display.

This is a very easy problem. You will be given a digit from 0 to 9 and you just have to tell the list of which lights should be on to display that digit.

Input

Input starts with an integer **T** denoting the number of test cases. Each case contains an integer **N**.

Constraints

T <= 1000

0 <=**N** <=9

Output

For each case, print the case number and the list of the lights.

You must print the list in **lexicographical order** in other words **dictionary order**. That means if **a** and **b** are a list, **a** must come before **b**. For digit '**6**' the list will be **acdefg**, not **afedcg**. For digit '**9**' the list will be **abcdfg**, not **acbfdg**.

See the samples for further details.

Example

Input:
3
1
2
3
Output:
Case 1: bc
Case 2: abdeg
Case 3: abcdg

[Original setter of this problem Pritom Kumar Paul, RUET]