Diverse Strings

In this challenge, we introduce the concept of *assorted* and *diversed* strings.

- A string s is called *assorted* if no two distinct letters in s appear the same number of times. For example, `aacbcc` is assorted, but `aabaccab` is not assorted, since `b` and `c` each appears exactly 2 times.

- A string s is called *diverse* if it is assorted and all its prefixes and suffixes are assorted. For example, `aabaa` is diverse, but `aaba` is not diverse, since the suffix `ba` is not assorted.

Given n and k, find the lexicographically smallest *diverse* string of length n with exactly k distinct letters. Your output string can only contain lowercase English letters. If no such string exists, output `NONE`.

Input Format

The first line of input contains q, the number of queries.

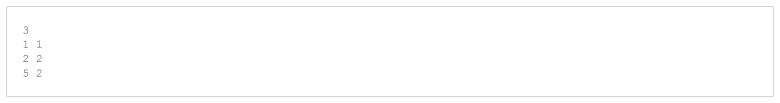Each query consists of a single line containing two space-separated integers n and k.

Constraints

- $1 \leq q \leq 60$
- $1 \leq n \leq 10^5$
- $1 \leq k \leq 26$
- $n \geq k$

Output Format

For each case, output a single line containing the required diverse string, or the string `NONE` if no such string exists.

Sample Input 0

```
3
1 1
2 2
5 2
```

Sample Output 0

```
a
NONE
aabaa
```