# 2 A Knight's Journey

Background

The knight is getting bored of seeing the same black and white squares again and again and has decided to make a journey around the world. Whenever a knight moves, it is two squares in one direction and one square perpendicular to this.

    The world of a knight is the chessboard he is living on. Our knight lives on a chessboard that has a smaller area than a regular 8×8 board, but it is still rectangular. Can you help this adventurous knight to make travel plans?
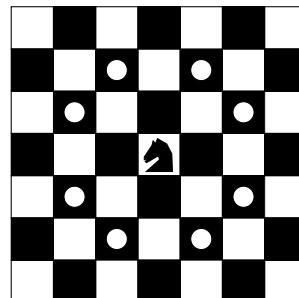
The eight possible moves of a knight

Problem

Find a path such that the knight visits every square once. The knight can start and end on any square of the board.

Input

The input begins with a positive integer n in the first line. The following lines contain n test cases.

    Each test case consists of a single line with two positive integers p and q, such that $1 \le p \cdot q \le 26$. This represents a $p \times q$ chessboard, where p describes how many different square numbers $1, \ldots, p$ exist, q describes how many different square letters exist. These are the first q letters of the Latin alphabet: A, ...

Output

The output for every scenario begins with a line containing `"Scenario #i:"`, where `i` is the number of the scenario starting at 1. Then print a single line containing the *lexicographically first* path that visits all squares of the chessboard with knight moves followed by an empty line. The path should be given on a single line by concatenating the names of the visited squares. Each *square name* consists of a *capital letter* followed by a *number*.

    If no such path exist, you should output `impossible` on a single line.

Sample Input

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

Sample Output

```
Scenario #1:
A1

Scenario #2:
impossible

Scenario #3:
A1B3C1A2B4C2A3B1C3A4B2C4
```