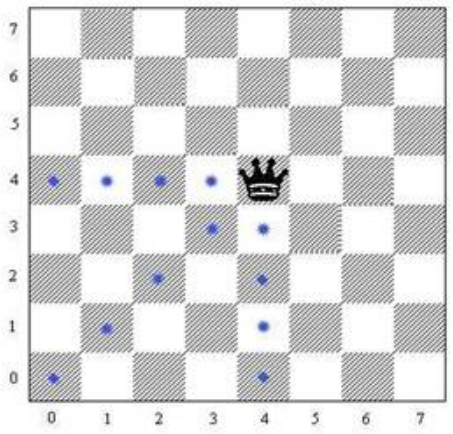
UVa Online Judge

11735 Corner the Queens



Corner the queen is a game played on $n \times n$ chess like board with two players. The rows and columns are numbered from 0 to $n-1$. Then a queen is placed on a random cell other than $(0,0)$. Each player gives one move of the queen towards the cell $(0,0)$. The move is like a chess queen. As you know a queen can move any number of cells horizontally, vertically or diagonally. In Formal a player can move a queen from cell (a_1, b_1) to cell (a_2, b_2) if ($a_1 = a_2$ or $b_1 = b_2$ or $|a_1 - a_2| = |b_1 - b_2|$). Moreover in this game, move that takes queen away from the cell $(0,0)$ horizontally or vertically or diagonally is not allowed. Formally, if a player moves queen from cell (a_1, b_1) to (a_2, b_2) then ($a_2 \leq a_1$ and $b_2 \leq b_1$) must be held. The player who first reaches the cell $(0,0)$ is the winner. Now you may already have guessed if both the players play optimally, the starting position determines the winner. For some cell like (2, 0) player 1 always wins and for some cell like (1, 2) player 2 always wins.

In this problem we consider an infinite chess board for playing the game. A rectangular region is specified. A cell from that region will be picked randomly as a starting position for the queen. All you have to find is the probability that player 1 wins assuming that both players will play optimally.

Input

The first line of input will be a number T ($T \leq 15000$) the number of test cases. Each of the following T lines will contain four integers x_1, y_1, x_2, y_2 ($0 \leq x_1 \leq x_2 \leq 1000000$, $0 \leq y_1 \leq y_2 \leq 1000000$). Here (x_1, y_1) is the lower left and (x_2, y_2) is the upper right portion of the rectangle. The lowest-leftmost cell is $(0,0)$ and it is always outside the given rectangle.

Output

For each line of input produce one line of output in the format '`Board` X`:` n `/` d'. Here X is the number of case, n and d is the numerator and denominator of the probability expressed in reduced form. See the sample input and output for illustration.

Sample Input

```
3
1 0 2 2
1 0 7 0
1 2 1 2
```

Sample Output

```
Board 1: 2 / 3
Board 2: 1 / 1
Board 3: 0 / 1
```