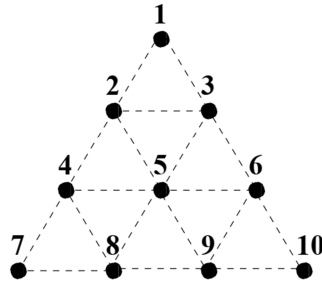# A. TWAR

T-War is a game that 2 competitors played on the following triangular grid:

Supposed A and B, take turns filling in any dotted line connecting two dots, A starting first. Each dotted line is filled only once. If the line filled by a player completes one or more triangles, he owns the completed triangles and is awarded another turn. The game ends after all dotted lines are filled in, and the competitor with the most triangles wins. The diference in the number of triangles owned by the two players is not important.

For example, if A fills in the line between 2 and 5 in the partial game on the left below:
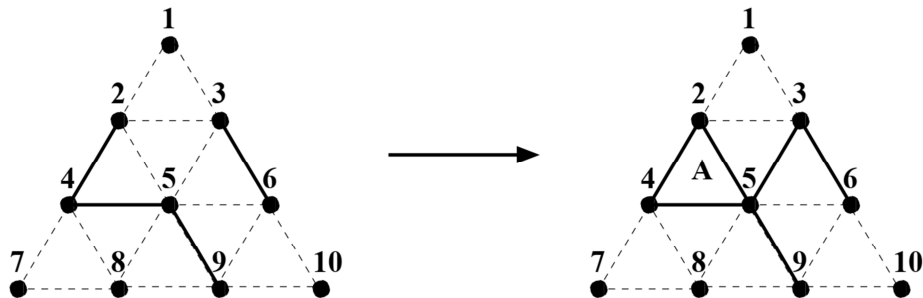
Then, she owns the triangle labelled A and takes next turn to fill in the line between 3 and 5. B can now own 3 triangles (if he wishes) by filling in the line between 2 and 3, then the one between 5 and 6, and finally the one between 6 and 9. B would then make one more move before it is A's turn again.

Now you are given a number of moves that have already been made. From the partial game, you should determine which player will win assuming that each player plays a perfect game from that point on.

INPUT

In the first line, you will be given a number of tests. For each test: the first line is an integer $6 \leq m \leq 18$ indicating the number of moves that have been made in the game. The next m lines indicate the moves made by the two players in order, each of the form i j (with i < j) indicating that the line between i and j is filled in that move. You may assume that all given moves are legal.

OUTPUT

For each game, print in one line the game number and the result as shown below. If A wins, print the sentence "A wins.". If B wins, print "B wins."

Sample Input	Sample Output
2	Game 1: B wins.
4	Game 2: A wins.
4 5	
5 9	
3 6	
2 5	
3 5	
2 7	
4	
4 5	
5 9	
3 6	
2 5	
3 5	
7 8	