Prac3

1. Which of the following are true and which are false? Give brief explanations.
2. True. The second player will play optimally, and there is predictable to tie.
3. False. In this game, knowing the second player’s movement help the first player know the information about game state.
4. False. This game is random. Such person can get the optimal expected winning.
5. Define in your own words the terms constraint, backtracking search, arc consistency, backjumping, min-conflicts, and cycle cutset.

Constraint: limits on variables

Backtracking search: Used for a depth-first search that chooses values for one variable at a time and backtracks when a variable has no legal values left to assign.

Arc consistency: A variable in a CSP is arc-consistent if every value in its domain satisfies the variable’s binary constraints.

Backjumping: backtracks to the *most recent* assignment in the conflict set; in this case, backjumping would jump over Tasmania.

Min-conflicts: In choosing a new value for a variable, the most obvious heuristic is to select the value that results in the minimum number of conflicts with other variables.

Cycle cutset: Choose a subset S of the CSP’s variables such that the constraint graph becomes a tree after removal of S. S is called a cycle cutset.

**3.** Explain why it is a good heuristic to choose the variable that is most constrained but the value that is least constraining in a CSP search.

The most constrained variable counts because it selects a variable that results in failure possibly and it’s more efficient to fail as early as possible. The least constraining value counts because there is the highest possibilities for future assignments to avoid conflict.

4. Consider the following procedure for choosing moves in games with chance nodes:

The procedure will show false results. The decisions that every players make in the deterministic tree base on the knowledge of dice roll.

5. Now, please consider this game: there are three plates A, B and C, each plate has three bills. A puts 1, 20, 50; B puts 5, 10, 100; C puts 1, 5, 20. All units are "Yuan". There are two persons A and B, and two of them can check out three plates and banknotes .（ A is ourself, The other is B） The game is divided into three steps: