

Topic:

1. Design a tower of Hanoi variation game using the things in the world, which is most difficult to solve, by observing those rules.
2. Think of a variant of tower of Hanoi game, which is easier to solve than the original one

Essay:

1. First of all, replace the original model of Hanoi tower game into a food chain. Same as the sequence of the different size of circles, those animals in the food chain, such as grass, rabbit, fox, tiger and human, are used to represent the relationship among them, in which the game can be replaced as a moving problem, so they have to move from one place to another. It is easy to find that the rules change as the animal located in the higher position cannot be put below the animal located in the lower position.

However, it still is the original game but in another representation. So in order to increase its difficulty, we can add some rules, for example, the human cannot be with the tiger alone in a same place or the fox cannot eat the rabbit when human is in the place. It is also possible to bring more places and animals or set more complicated rules.

As for the rules, I do not think that there exists the most difficult one because of the interdependence among these rules. Let's imagine there is just one single rule that the goal is to gather all the items in the left-most area at the first place, so the fastest approach is moving all the items directly. In order to prevent it, we have the rules that you should move items one by one. And then, there still is a way that we can come to the middle area for help, which means we can move items and store it in middle area as the shape from regular triangle to downward-pointing triangle and deliver them to the final area. That the reason why we need the froth rule. What I want mention is that the rules is connected with each other, so I cannot pick up the single one among the standard of difficulty.

2. As the inspiration of the Hanoi variation game using Lego, we can change the game from 3-dimension into 2- dimension or bring in more middle area. But honestly speaking, I do not find an easier representation without changing the original rules.