Extra Credit 5

Several pows are told by the king of enemies that they will be put to sleep by injection and the next morning each of them will wake up with a green or red hat on. Each will see the color of each other but not of their own. They will ask the color of each owns hat and the pow will be killed if the guess is wrong. The pows need to establish a strategy that will guarantee survival of all of them except possibly one.

The pows made a strategy that would save almost life of all of them but not all of them. They made a strategy that if a random pow would be selected to ask his hat color. He will shout out the color of the hat that has an even number by counting the other pows' hats. The hat will be either green or red. Let's suppose the red hat is even in number. If the red hat has an even number, he will shout out the red hat. But for the first pow, there is a 50% probability that he is right. But this saves the lives of the other pows. After that, the second pow will be selected, and he already knows that number of red hats is even, then he counts the number of red hats of the other pows. If the number of red hats is odd, that means he is the one who is wearing the red hat. If it is even, that means he is wearing a green hat. Now, let's suppose the number of red hats is odd; that means he is actually wearing a red hat. Then he shouts out the red hat. Then the third pow will be selected, and he already knows that the previous pow shouted out the red hat. That means now there is an odd number of red hats. So, he will count the number of red hats. If the red hat is found to be odd, that means he is wearing a green hat. If there are an even number of red hats, then he is the one who is wearing a red hat and so on. This will save the lives of almost all the pows.