

## Homework 12

**Question 1** : Consider again the game we studied in class: Two players can decide whether to FIGHT or QUIT over a prize that has a value of  $V$ . FIGHTing will cost the players a payoff of  $C$ . If one player FIGHTs and the other QUITs, the FIGHTing player gets to claim the prize and the other player gets nothing. If both players QUIT, they both get nothing. If both players FIGHT, the game goes on for another round. In the second round, if both players FIGHT again, they both get nothing. Players make their choices simultaneously each round. Assume  $V > C$ .

In class, we calculated the pure strategy Subgame Perfect Equilibria. For your homework, calculate the mixed strategy SPE. As the first step, find the mixed strategy Nash Equilibrium for the second round subgame (After both players choose FIGHT).

**Question 2** : Consider again the game in Question 1. This time, assume that  $V < C$ . Find all the SPEs, whether pure strategy or mixed strategy. Remember to consider the case where the players use mixed strategies in the first round but not the second!