1. An old lady is looking for help crossing the street. Only one person is needed to help her; more are okay but no better than one. You and I are the two people in the vicinity who can help; each has to choose simultaneously whether to do so. Each of us will get a pleasure worth a 3 from her success (no matter who help her). But each one who goes to help will bear a cost of 1, this being the value of our time taken up in helping. Set this up as a game. Write the payoff table and find all pure strategy Nash Equilibrium.

2. Three oligopolists operate in a market with inverse demand given by $P(Q) = a - Q$, where $Q = q_1 + q_2 + q_3$ and $q_i$ is the quantity produced by firm $i$. Each firm has a constant marginal cost of production, $c$, and no fixed cost. The firms choose their quantities as follows: (1) firm 1 chooses $q_1 \geq 0$; (2) firms 2 and 3 observes $q_1$ and then simultaneously choose $q_2$ and $q_3$, respectively. What is the subgame-perfect outcome?

3. Exercise 20 page 466 (Tirole)