Problem set 5
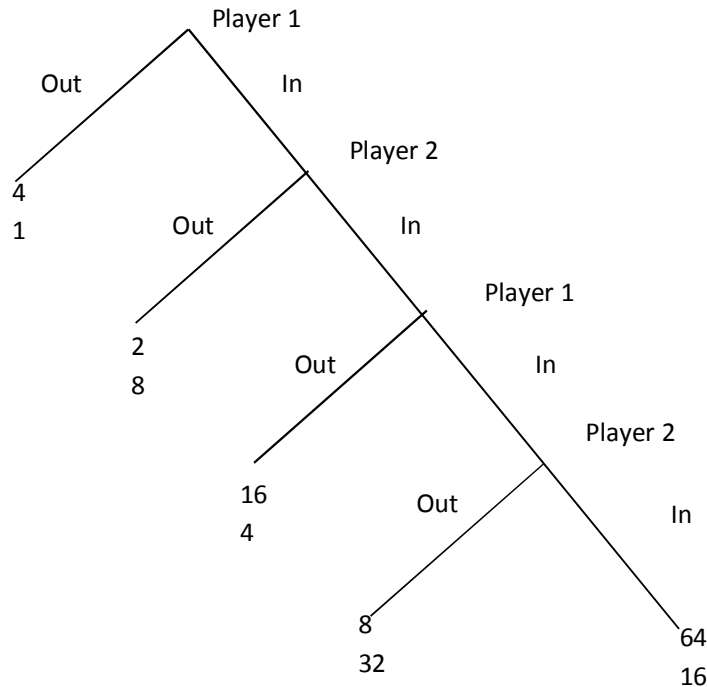
Ex 1.

In each decision node players have two possible actions, *In* or *Out*

   a) Represent this game in normal form and find all Nash equilibria.
   b) Find all Subgame perfect Nash equilibria.

Ex 2. Two individuals, A and B, are working on a join project. They can devote it either high effort or low effort. If both players devote high effort, the outcome of the project is of high quality and each one receives 100$. If one or both devote low effort, the outcome of the project is of low quality and each one receives 50$. The opportunity cost to provide high effort is 30. The opportunity cost to provide low effort is 0. Individual A moves first, individual B observes the action of A and then moves.

   i)   Using the normal form, find all Nash equilibriums
   ii)   Find all Subgame perfect Nash equilibria.

Ex. 3 There are 2 players that must state one number from the set {0, 1, 2). The payoff of each player is given by the stated number minus the absolute difference between his stated number and the number stated by the other player. Players move in a sequence: Player 1 moves first then player 2. When player 2 has to move he is only partially informed about the choice of player 1: he can see if player 1 chosen 2 but he cannot discriminate if player 1 chosen 0 or 1

   a) using the normal form find all NE
   b) suppose that player 2can observe all choices of player 1. Find all Subgame perfect Nash equilibria.

Ex. 4 An individual want to sell a car at a price no lower than £ 1.000. Two buyers, 1 and 2, simultaneously send to the car's seller their offers. Car's seller chooses to sell the car to the buyer that sent the best offer. If the two offers are equal, the car's seller sells the car to buyer 1

a. Represent the game in point a. using the normal form and find all NE.