Midterm #1 – EconS 424

Review Materials

1. We started with dominance solvable games: too easy!!

2. Nash equilibrium in pure strategies:

    a. Two players

    b. Three players

3. Nash equilibrium using mixed strategies:

    a. Two players, and

    b. Three players (Too long for an exam, remember the example of "Friday the 13th"?)

    c. *Important*: do you remember how to draw the BRF for games with mixed strategies.

    d. *Important*: even if you go over one or two examples of mixed strategy NE with two players only, be familiar to computing:

        i. The Expected Utility that players obtain from playing the particular msNE you just found.

        ii. The probability that a particular outcome occurs, e.g., cell (A, X).

4. Cournot and Bertrand games: we have done a lot!!

    a. Some chances of having one exercise using Cournot or Bertrand.

    b. Recall how to draw the BRF for a Cournot and Bertrand games.

5. Strictly competitive games (maxmin strategies):

    a. Refresh how to find the maxmin strategy in the Matching pennies game, and others we saw in class.

6. Sequential-move games. We solve them by using backward induction:

    a. Most of them are really easy. But be careful…

    b. When two/three players act simultaneously in the last stage of the game, you have to treat that subgame as if it was a normal form game in order to find the NE of that matrix.

7. Applications of sequential-move games:

    a. Stackelberg game of quantity competition between a leader and a follower.

    b. Bargaining games:

        i. Ultimatum bargaining game (T=1),

        ii. Alternating offers bargaining game (T=2, or higher). Important: remember the "ladder" trick that we were using in order to apply backward induction in these games? (See lecture notes).

8. At the end of the chapter on sequential-move games, we saw some more examples about sequential-move games: Advertising and competition, Limit capacity, as well as the four cases in the taxonomy of strategic pre-commitment ("a classification of dogs").

    a. Not for this exam, maybe for Midterm #2.

9. What about repeated games?

    a. Not for this exam, definitely for Midterm #2.