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Econ 812

HW #5 (will NOT be collected or graded)

1. Determine the critical value of β for Bertrand collusion enforced by punishments of just ONE turn of Nash reversion.
2. Determine the critical value of β for Cournot collusion enforced by punishments of just ONE turn of Nash reversion.
3. Consider the voluntary donation game in part II of the Week 6 notes. Determine the critical value of β required to sustain the socially optimal donation level using trigger strategies.
4. Suppose there are 2 players deciding whether to contribute to a public good. The public good is discrete: it is produced at the optimal level so long as 1 person contribute. Contributing costs the individual who contributes C , and 0 otherwise. If the public good is produced, everyone gets a benefit of B ; otherwise they get a benefit of 0. $B > C$. Calculate and explain the PSNE of this game. Informally, what would the MSNE look like?
5. Characterize the PSNE of the game in problem 4 if there are N players and $(N-k)$ people must contribute to create the public good.
6. Diagram a situation where there are large externalities but laissez-faire still yields a perfectly efficient result. Suggest a real-world example.
7. Suppose you have a 2-player version of problem #3, with one difference: Each agent cares somewhat about the other, so they maximize $U_i = c_i D + a * c_j D$, with $0 < a < 1$. How does your answer to #3 change, and why? (Hint: You have two symmetric equations in two unknowns).
8. Present and explain a novel application of:
 - a. Coordination games
 - b. Hawk/Doves games
9. Where are you most likely to see full rent-dissipation? When are you least likely to see it?
10. Carefully explain and diagram the welfare properties of the "worse-case" of monopoly, where there is allocative, productive, AND lobbying inefficiency.