

EE672: Game Theory for Wireless Networks
Homework 3

Consider the stag-hunt game we discussed in the first lecture.

	stag	hare
stag	(2,2)	(0,1)
hare	(1,0)	(1,1)

As you recall, the game has two Nash equilibria: a payoff dominant and a risk dominant.

- (a) Assume now that the game is played repeatedly, with an infinite time horizon, and applying a discount factor of δ . What is the range of δ for which cooperation can be induced (the achieved equilibrium is (stag, stag))? Propose a strategy that will induce cooperation.
- (b) What equilibrium will be achieved if the game is played for 3 stages only? Can you still achieve (stag, stag) equilibrium for this finite game (for what range of δ ? What is the payoff achieved?