

ECON 101

TA Worksheet, Module 14 (Game Theory)

Name: _____

TA: _____

1. In the 1960s, when people were dumb, there was a game called “chicken” that went like this: two people drive their cars at each other. Before they crash, the drivers have to choose whether to keep going straight or turn. If both go straight, they crash. But if one goes straight and the other turns, then the one who goes straight is super cool and the other player sucks. If they both turn then it’s just kinda lame.

- a. Here is the payoff matrix. What is/are the equilibria to this game? (assume it’s better to lose than crash and better to tie than lose.)

	Player 2 Straight	Player 2 Turn
Player 1 Straight	Crash, Crash	1 wins, 2 loses
Player 1 Turn	1 loses, 2 wins	Tie, tie

- b. What kind of game is this?

- c. Suppose both players played the maximin strategy in the chicken game. What would be the result?

2. This game has no story, it’s just a game. What’s the Nash Equilibrium of this game? (the first number is player 1’s payoff, the second number is player 2’s payoff.)

	Player 2 Left	Player 2 Right
Player 1 Top	300, 200	100, 300
Player 1 Bottom	200, 100	200, 200

3. If these firms could collude (through a repeated game), what choices would they make to maximize their joint profits? (they are choosing the quality of their product)

	Firm 2 chooses high quality	Firm 2 chooses low quality
Firm 1 chooses high quality	Firm 1 profits = \$2 million, Firm 2 profits = \$2 million	Firm 1 profits = \$5 million, Firm 2 profits = \$1 million
Firm 1 chooses low quality	Firm 1 profits = \$1 million, Firm 2 profits = \$5 million	Firm 1 profits = \$4 million, Firm 2 profits = \$4 million

4. In a repeated game, what's the difference between the grim trigger strategy and the tit-for-tat strategy?