

MATH 180 HOMEWORK

ASSIGNED TUESDAY, OCTOBER, 23
DUE THURSDAY, OCTOBER 25* AT THE BEGINNING OF CLASS

*THIS PROBLEM IS DUE IN ADDITION TO THE FIRST THREE PROBLEMS ON THE “MORE PROBLEMS ON GAME THEORY” HANDOUT OF PROBLEMS ASSIGNED ON TUESDAY 10/9.

- (4) In the Iterated Prisoner’s Dilemma the Tat-for-Tit strategy plays as follows: It begins with Defect. After the first round, it determines its next play by its opponents previous choice. If the opponent has just played Cooperate, then Tat-for-Tit copies its own last move (e.g. if it just played Cooperate, it does that again). If the opponent has just played Defect, then Tat-for-Tit changes its last move (e.g., if it just played Cooperate, then it plays Defect).

The payoff matrix in this problem is:

		Tat-for-Tit	
		Cooperate	Defect
Tit-For-Tat	Cooperate	(3, 3)	(0, 5)
	Defect	(5, 0)	(1, 1)

- (a) Explain why these strategies never mutually cooperate. (You may want to make a table showing each round as we did in class.)
- (b) Discuss the payoffs to each player as the game iterates.
- (c) What move does each strategy make in the 180th round of the game?
- (d) If the game stopped after the 180th round, which strategy comes out the winner?