

EVOLUTION AND THE THEORY OF GAMES

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Exercises 14-09-2016

1. Solve the following game, if possible, for dominant strategy solutions:

	y_1	y_2	y_3	y_4
x_1	4, 5	5, 3	5, 6	4, 4
x_2	5, 3	2, 1	3, 5	5, 2
x_3	2, 6	6, 3	4, 2	5, 5

2. Take the example of Big Joe and Little Joe under the banana (or whatever) tree (page 4 of lecture notes 01-11-2011) but with the following modifications:

(a) Little Joe makes the first move; (b) Both players move simultaneously; (c) Little Joe decides who is going to make the first move.

Reformulate the game (i.e., strategy sets and payoff function) for each of these modifications, and solve, if possible, for dominant strategy solutions.

3. Consider the Hawk-Dove game:

	H	D
H	$(R - C)/2, (R - C)/2$	$R, 0$
D	$0, R$	$R/2, R/2$

Give, if possible, dominant strategy solutions for $R > C$ and for $R < C$. How does this change if mixed strategies are allowed?