



- f) At the sequential game the non-cooperative equilibrium is the same regardless of who moves first. Note also that the other non-cooperative equilibrium of the original simultaneous game, that is (North, North), is eliminated at the sequential game.

2.

		Victoria	
		----->	
Albert	Clean		Clean
	Do Nothing		Do Nothing
		↓	(5, 5)
		↓	(0, 8)
		↓	(8, 0)
		↓	(1, 1)
		----->	

For both roommates, doing nothing is the dominant strategy.

Not surprisingly, the non-cooperative equilibrium is for both to do nothing.

3.

		Runt	
		----->	
Big Pig	Press		Press
	Wait		Wait
		↓	(5, 1)
		↓	(4, 4)
		↓	(9, -1)
		↓	(0, 0)
		----->	

Each of the 10 units of food is worth 1 unit of utility, while pressing the panel is worth -2 units. As can be seen above, this is not a constant-sum game.

For the runt, waiting is the dominant strategy.

The only non-cooperative equilibrium is for the runt to wait and the big pig to press the panel.

4. (a)

		Barack	
		----->	
Hillary	N		N
	M		M
		↓	(5, 5)
		↓	(0, 6)
		↓	(6, 0)
		↓	(2, 2)
		----->	

M is a dominant strategy for both sides. The non-cooperative equilibrium is at (M, M).

(b)

		Barack	
		-----<	
Hillary	N		N
	M		M
		↓	(5, 5)
		↓	(0, 3)
		↓	(6, 0)
		↓	(2, 2)
		----->	

Now Barack's best reply to Hillary's "N" strategy is "N". Hillary has "M" as a dominant strategy,

but Barack does not have a dominant strategy. The non-cooperative equilibrium is the same as before at (M, M).

(c)

		Barack	
		←	→
Hillary	N	↓	N
			(5, 5)
	M	↓	M
			(0, 3)
			(6, 0)
			(2, -1)
		↓	↓
		←	→

Now Barack has “N” as a dominant strategy (and Hillary still has “M” as a dominant strategy). The equilibrium is (M, N).

(d) After adding the 3 units to (a) for the “M” strategy, the payoffs are:

		Barack	
		←	→
Hillary	N	↓	N
			(5, 8)
	M	↓	M
			(0, 6)
			(6, 3)
			(2, 2)
		↓	↓
		←	→

Clearly, the best replies are the same, and the equilibrium is the same at (M, N).