

20820713 Shi Qin Quiz 7

1 a) Tit-for-tat is Copy cat, that will start with cooperate and simply repeats whatever opponent did in last round

trigger is Grudger, that will start with cooperate and keep cooperating until opponent cheat once, and always cheat afterwards.

b) One of the factors is low miscommunication, if low miscommunication is too high, trust will break down, but if a little bit of miscommunication occur, it pays to be more forgiving and allow higher payoff for both.

another factor is repeat interactions. trust keep relationships going, but it is also needed repeat interactions before trust can evolve

2

	C	D
C	2, 2	-1, 3
D	3, -1	0, 0

always C

$$\pi_1(\delta', \delta) = \pi_1(\delta, \delta) = 2 + 2\delta + 2\delta^2 + 2\delta^3 - \dots$$

$$= \frac{2}{1-\delta}$$

start D

$$\pi_2(\delta', \delta) = 3 + 0\delta + 0\delta^2 - \dots = 3$$

$$\pi_2(\delta, \delta) = \frac{2}{1-\delta}$$

$$\frac{2}{1-\delta} \geq 3$$

$$2 \geq 3 - 3\delta$$

$$-1 \geq -3\delta$$

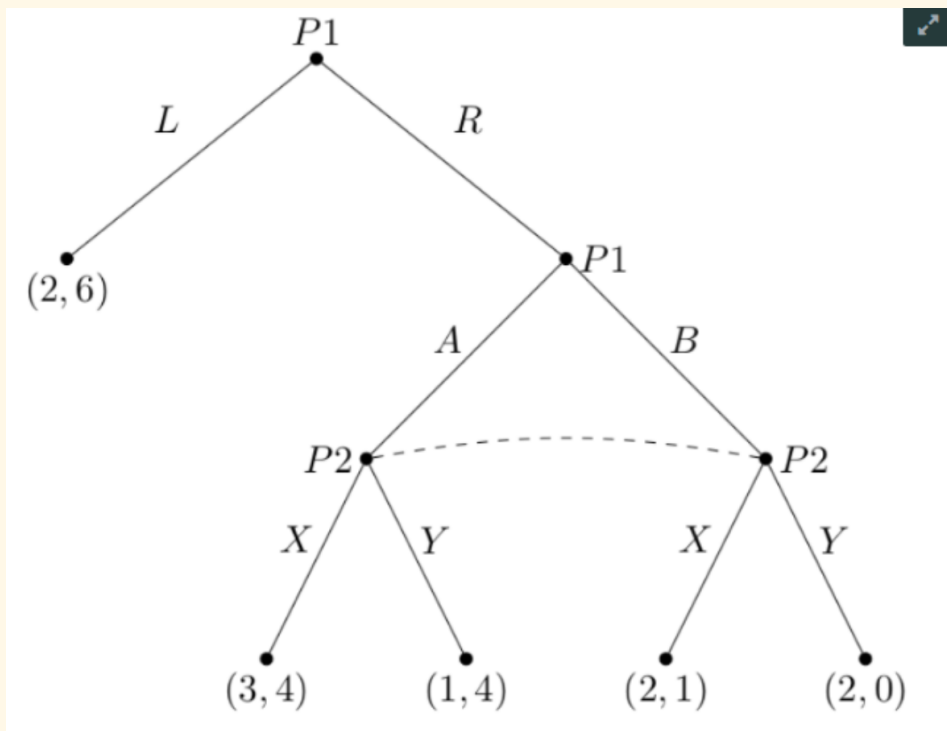
$$3\delta \geq 1$$

$$\delta \geq \frac{1}{3}$$

$$\delta_0 = \frac{1}{3}$$

if start with D

3



	X	Y
LA	2, <u>6</u>	(<u>2</u> , <u>6</u>)
LB	2, <u>6</u>	(<u>2</u> , <u>6</u>)
P1 RA	(<u>3</u> , <u>4</u>)	1, <u>4</u>
P1 RB	2, <u>1</u>	<u>2</u> , 0

pure strategy Nash is (RA, x) , (LA, y) , (LB, y)

for sub game (RA, x) is subgame perfect.

