Feedback — In-Video Quizzes Week 5

Help Center

You submitted this quiz on **Sun 17 Feb 2013 7:23 AM PST**. You got a score of **3.00** out of **3.00**.

Question 1

5-2 Infinitely Repeated Games: Utility

- Consider a repeated game such that with probability p the game continues to the next period and with probability $(1-p)$ it ends.
- The game starts in period 1 and in odd periods both players play L and in even periods both players play R. The stage game payoffs are listed below

1 \ 2	L	R
L	3,3	-1,4
R	4,-1	1,1

What is the expected total future payoff (starting at the beginning of the game) for each player, when the game is forecast to be played as described as above:

Your Answer		Score	Explanation
a) $3+3p+3p^2+3p^3+\ldots$			
b) $4+-1p+4p^2+-1p^3+\ldots$			
c) $3+1p+3p^2+1p^3+\ldots$	✔	1.00	
d) $4+3p+4p^2+3p^3+\ldots$			
Total		1.00 / 1.00	

Question Explanation

(c) is true.

- In odd periods, both players play L so that each earns 3 in those periods.
- In even periods, both players play R such that each earns 1 in those periods.
- Thus the total ex ante expected payoff for each player is $3 + 1p + 3p^2 + 1p^3 + \ldots$, as p is the probability that the second period is reached, p^2 is the probability that the third period is reached and so forth.

Question 2

5-6 Discounted Repeated Games

Consider the rock-paper-scissors game:

1\ 2	Rock	Paper	Scissors
Rock	0,0	-1,1	1,-1
Paper	1,-1	0,0	-1,1
Scissors	-1,1	1,-1	0,0

How many elements are there in H^2 (the set of histories of two plays of the game):

Your Answer		Score	Explanation
a) 2^3.			
b) 9^2.	✔	1.00	
c) 3^2.			
d) 3^3.			

Total	1.00 / 1.00

Question Explanation

(b) is true.

- H^1 has 9 elements: (R,R), (R,P), (R,S), (P,R), (P,P), (P,S), (S,R), (S,P), (S,S).
- Then H^2 has 9x9 elements of the form (h^1, h^2) where h^1 and h^2 each has 9 possible values (the same as those in H^1).

Question 3

5-7 A Folk Theorem for Discounted Repeated Games

Player 1\ Player 2	Movie	Home
Movie	3,0	1,2
Home	2,1	0,3

Which per period payoff is not enforceable:

Your Answer		Score	Explanation
a) (0,3)			
b) (3,0)			
c) (2,1)			
d) All of above.	✔	1.00	
Total		1.00 / 1.00	

Question Explanation

(d).

- The minmax value of player 1 is 1 and of player 2 is 2.
- Thus (0,3), (3,0) and (2,1) are not enforceable since in each case they give to a player an expected value lower than her minmax value.