## In-Video Quizzes Week 5

Practice Quiz, 3 questions

3/3 points (100%)



# **Congratulations! You passed!**

Next Item



1/1 point

1

- 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:

$$\bigcirc$$
 a)  $3+3p+3p^2+3p^3+\dots$ 

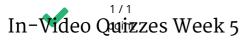
$$igcap b) \, 4 - 1p + 4p^2 - 1p^3 + \ldots$$

$$\bigcirc$$
 c)  $3+1p+3p^2+1p^3+\dots$ 

#### Correct

(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.
- $\bigcirc$  d)  $4+3p+4p^2+3p^3+\dots$



3/3 points (100%)

Practice Quiz, 3 questions 2.

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):

2)	$2^3$
a)	$Z^{\circ}$

0	b) $9^2$

### Correct

(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  $H^1$ ).

c) $3^2$
-, -

$$\bigcirc$$
 d)  $3^3$ .



1/1 point

3.

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

Which per period payoff is not enforceable:

a) (0,3)

# In-VideodQuizzeseWeek 5

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### Correct

(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.



