In-Video Quizzes Week 2

Practice Quiz, 3 questions

3/3 points (100%)



Congratulations! You passed!

Next Item



1/1 point

1.

Consider the predator/prey game with a mixed strategy:

mixed		р	1-p
	Pred\ Prey	Active	Passive
q	Active	2,-5	3,-6
1-q	Passive	3,-2	-1,0

What are p and q in a mixed-strategy equilibrium? (Hint: payoff of the predator when playing active is 2p+3(1-p); when playing passive is 3p-(1-p). Payoffs should be equal since the predator should be indifferent.)

- a) 2/3; 1/2.
- b) 2/5; 1/3.
- c) 4/5; 3/5.
- d) 4/5; 2/3.

Correct

(d) is true.

- For p, following the hint we have, 2p+3(1-p)=3p-(1-p), implies p=4/5.
- For q, payoff of the prey when playing active is -5q 2(1-q); when playing passive it is -6q.
- These two payoffs should be equal: -5q-2(1-q)=-6q, implies q=2/3.



1/1 point

2

Consider the penalty kick game with a very accurate kicker:

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3/3 points (100%)

D	0 : 2			3/3 points (10
Practi	ce Quiz, 3 questions mixed		р	1-р
		Kicker\ Goalie	Left	Right
	q	Left	0,1	1,0
	1-q	Right	1,0	0,1

What are p and q in a mixed-strategy equilibrium? (Hint: payoff of the kicker when playing left is 0p+(1-p); when playing right is p+0(1-p). Payoffs should be equal since the kicker should be indifferent.)

- a) 1/2; 3/4.
- b) 3/4; 1.
- c) 1/2; 1/2.

Correct

(c) is true.

- For p, following the hint we have, 0p + 1(1-p) = p + 0(1-p), implies p = 1/2.
- ullet For q, payoff of the goalie when playing left is q+0(1-q); when playing right it is 0q+(1-q)
- These two payoffs should be equal: q+0(1-q)=0 q+(1-q), implies q=1/2.
- d) 3/4; 3/4.



1/1 point

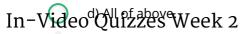
3

Consider the following game:

1\ 2	L	R
Т	2,2	0,2
В	1,2	3,3

Find all pure-strategy and mixed-strategy Nash equilibria:

- a) (T, L);
- b) (B, R);
- c) Player 1 plays T with prob q=1, player 2 plays L with prob p=3/4;



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Correct

(d) is true.

- You can verify that (T, L) and (B, R) are pure strategy Nash equilibria by showing no single player would be better off by deviating from the prescribed strategy, taking the other's as given.
- Mixed equilibrium where player 1 plays T with prob = q and player 2 plays L with prob = p:
- For p, payoff of 1 when playing T is 2p + 0(1 p), and when playing B is 1p + 3(1 p). These payoffs should be equal implying p = 3/4.
- For q, you can check this in the same way yourself.
- Notice that the mixed-strategy equilibrium requires one of the players to be playing deterministically, that is, not randomizing at all.



