Algorithmic Game Theory

Algorithmische Spieltheorie

Pingo

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Website

https://pingo.coactum.de/

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Question 1

		Belle	
		Shopping	Stopping
Anna	Shopping	$(7, 3)$	$(2, 4)$
	Stopping	$(4, 2)$	$(1, 1)$

A There is a strict Nash equilibrium in pure strategies.

B There are exactly two Nash equilibria in pure strategies.

C There are exactly three Nash equilibria in pure strategies.

D There are exactly four Nash equilibria in pure strategies.

Question 2

		Belle	
		Shopping	Stopping
Anna	Shopping	$(7, 3)$	$(2, 4)$
	Stopping	$(4, 2)$	$(1, 1)$

A Anna has a dominant strategy.

B Belle has a dominant strategy.

C Anna has a strictly dominant strategy.

D Belle has a strictly dominant strategy.

Question 3

		Belle	
		Shopping	Stopping
Anna	Shopping	$(7, 3)$	$(2, 4)$
	Stopping	$(4, 2)$	$(1, 1)$

A Exactly one strategy profile is Pareto-optimal.

B Exactly two strategy profiles are Pareto-optimal.

C Exactly three strategy profiles are Pareto-optimal.

D All four strategy profiles are Pareto-optimal.

Question 4

Which of the following claims are true?

A Every strict Nash equilibrium in pure strategies is a profile of strictly dominant strategies.

B Every profile of strictly dominant strategies is a strict Nash equilibrium in pure strategies.

C Every Pareto-optimal profile contains only dominant strategies.

D There is a two-player normalform game with two strategies per player that has a strict Nash equilibrium in pure strategies but no dominant strategies.

Question 5

		Belle	
		C	S
Anna	C	$(-100, -100)$	$(1, 0)$
	S	$(0, 1)$	$(0, 0)$

This reminds me of . . .

A . . . the prisoners' dilemma.

B . . . the battle of the sexes.

C . . . the chicken game.

D . . . the penalty game.

Question 6

		Belle	
		Crossing	Stopping
Anna	Crossing	$(-100, -100)$	$(1, 0)$
	Stopping	$(0, 1)$	$(0, 0)$

A There is a strict Nash equilibrium in pure strategies.

B There are exactly two Nash equilibria in pure strategies.

C There are exactly three Nash equilibria in pure strategies.

D There are exactly four Nash equilibria in pure strategies.

Question 7

		Belle	
		Cross	Stop
Anna	Cross	$(-100, -100)$	$(\mathbf{1}, \mathbf{0})$
	Stop	$(\mathbf{0}, \mathbf{1})$	$(0, 0)$

Which of the following claims are true?

In addition to the two Nash equilibria in pure strategies, . . .

A . . . there is no Nash equilibrium in mixed strategies.

B . . . there is exactly one Nash equilibrium in mixed strategies.

C . . . there are exactly two Nash equilibria in mixed strategies.

D . . . there are exactly four Nash equilibria in mixed strategies.

Question 8

Which of the following walks are correct according to the proof of Sperner's lemma?

A

B

C

D

E

F