Algorithmic Game Theory

Algorithmische Spieltheorie

Pingo

Wintersemester 2022/2023

Dozent: Prof. Dr. J. Rothe

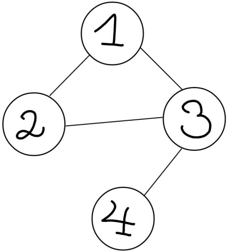
Website

https://pingo.coactum.de/

Access Number:
885317

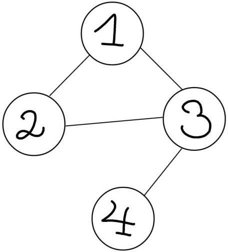
Question 1

Consider the network of friends:



Question 1

Consider the network of friends: Which of the following preferences are true under enemy-oriented preferences?



A $\{1,2\} \succ_1 \{1,4\}$

B $\{1,2,4\} \succ_1 \{1,3,4\}$

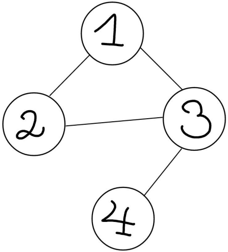
C $\{1,2,3,4\} \succ_1 \{1,3\}$

D $\{1,2,3,4\} \succ_1 \{1,2,4\}$

E $\{1,2\} \succ_1 \{1,2,3,4\}$

Question 2

Consider the network of friends: Which of the following preferences are true under friend-oriented preferences?



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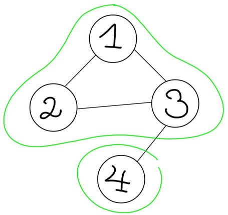
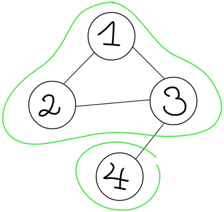
Question 3

Consider the coalition structure $\Gamma = \{\{1, 2, 3\}, \{4\}\}$ in this game:



Question 3

Consider the coalition structure $\Gamma = \{\{1,2,3\},\{4\}\}$ in this game: Which of the following statements are true under enemy-oriented preferences?



A 1 and 2 cannot be part of any weakly blocking coalition for Γ.

B $\{3,4\}$ weakly blocks Γ.

C $\Gamma(3) = \{1,2,3\} \succ_3 \{3\}$.

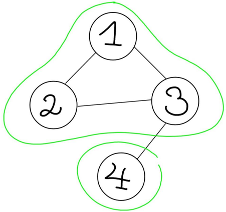
D $\{4\} \succ_4 \{4\} = \Gamma(4)$.

E Γ is core stable.

F Γ is strictly core stable.

Question 4

Consider the coalition structure $\Gamma = \{\{1,2,3\},\{4\}\}$ in this game: Which of the following statements are true under friend-oriented preferences?



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Question 5

Five players $0, 1, 2, 3, 4$ are sitting (in this order) around a round table. Every player i (modulo 5 throughout) assigns

- a value $v_i(i + 1) = 1$ to the player to his right,
- a value $v_i(i - 1) = 2$ to the player to his left, and
- a value -4 to the remaining two players.

Question 5

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Does this additive hedonic game allow a core stable partition?

A Yes.

B No.