Preference Aggregation by Voting: Algorithmics and Complexity

Präferenzaggregation durch Wählen: Algorithmik und Komplexität

Pingo

Wintersemester 2020/2021

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Website

https://pingo.coactum.de/

Access Number:
885317

Question 1

When will the lecture start?

A 8:40 Uhr

B 8:30 Uhr

Question 2

I'm here today because . . .

A . . . I want to see my candidate winning!

B . . . I want to know more about how to aggregate preferences.

C . . . I hate to lose an election!

D . . . I want to know how to protect elections against manipulative attacks.

Question 3

Jamaica failed. The traffic light failed. Now the elections for the 20th Bundestag have to be repeated. Please give your vote (for just a single party) here:

A AfD
B Bündnis 90/Grüne
C CDU
D Die Linke
E FDP
F SPD
G Sonstige
H Enthaltung

Question 4

Which of the following are correct?

A A majority winner is always a plurality winner.

B A plurality winner is always a majority winner.

C For two candidates and three voters, a plurality winner is always a majority winner.

D Borda satisfies the majority criterion.

Question 5

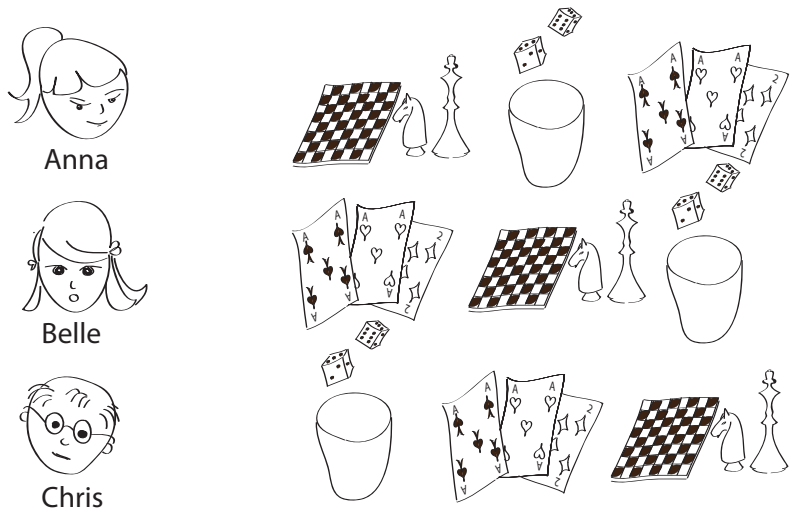

Figure: Anna, Belle, and Chris are voting on which game to play

Who is winning under Condorcet voting?

A Chess

B Yahtzee

C Poker

D None of these games

Question 6

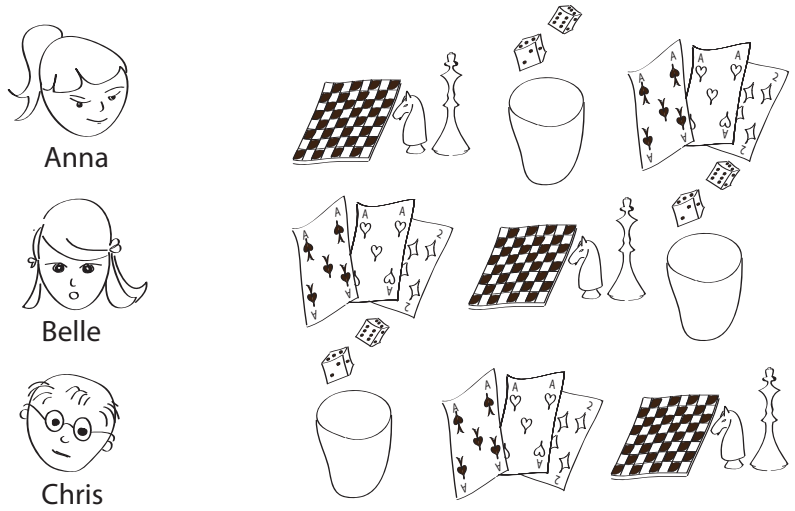

Figure: Anna, Belle, and Chris are voting on which game to play

Who is winning under Dodgson voting?

A All of these games

B Chess

C Yahtzee

D Poker

Question 7

Which of the following voting systems fails monotonicity?

A Plurality

B Dodgson

C Condorcet

D Borda

Question 8

Consider the election (C, V) with $C = \{a, b, c, d\}$ and V:

v_1 : c b a d

v_2 : a d c b

v_3 : b a c d

v_4 : d b a c

A a and b are the plurality winners.

B a and b are the Borda winners.

C a and b are the veto winners.

D a and b are the Dodgson winners.

Question 9

Is it true that the following voting system always has a winner?

A Plurality

B Majority

C Borda

D Condorcet

Question 10

Is it true that if the following voting system has a winner, this winner must be unique?

A Plurality

B Majority

C Borda

D Condorcet

Question 11

In the definition of monotonicity of a voting system, preference profiles are modified so as to improve the position of a winner. Suppose *a b c d* is a vote in a preference profile and *c* is a winner. Which of the following are relevant modifications of this vote for this definition?

A *c b a d*

B *c a b d*

C *a c b d*

D *b a d c*

Question 12

In the definition of strong monotonicity of a voting system, preference profiles are modified so as to improve the position of a winner. Suppose *a b c d* is a vote in a preference profile and *c* is a winner. Which of the following are relevant modifications of this vote for this definition?

A *c b a d*

B *c a b d*

C *a c b d*

D *b a d c*