

Preference Aggregation by Voting: Algorithmics and Complexity

Präferenzaggregation durch Wählen: Algorithmik und Komplexität

Pingo

Wintersemester 2020/2021

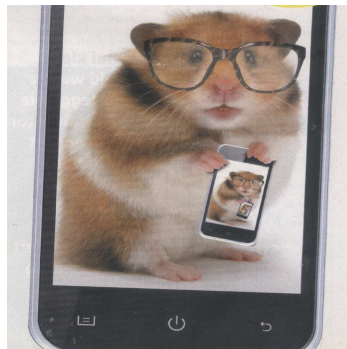
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Question 1

Let $\mathcal{E}$ be a voiced voting system. Which of the following statements is true?

- A $\mathcal{E}$ is susceptible to DCDC.
- B $\mathcal{E}$ is susceptible to DCAC.
- C If $\mathcal{E}$ is not susceptible to CCDV, then $\mathcal{E}$ is not susceptible to DCAV.
- D $\mathcal{E}$ is not susceptible to CCAV.

Question 2

Anna : a b d c

Belle, Chris: c d b a

David: d b a c

Can **c** be prevented from being the unique plurality winner by deleting exactly one candidate (other than **c**)?

A Yes, by deleting {**a**}.

B Yes, by deleting {**b**}.

C Yes, by deleting {**d**}.

D No.

Question 3

Anna :	a	b	d	c
Belle, Chris:	c	d	b	a
David:	d	b	a	c

Can **c** be prevented from being the unique plurality winner by deleting at most two candidates (other than **c**)?

- A Yes, by deleting {**a**, **b**}.
- B Yes, by deleting {**a**, **d**}.
- C Yes, by deleting {**b**, **d**}.
- D No.

Question 4

Let $\mathcal{E}$ be a voting system. Which of the following statements is true?

- A If $\mathcal{E}$ is not susceptible to DCAC, then $\mathcal{E}$ is not susceptible to CCPV-TE.
- B If $\mathcal{E}$ is not susceptible to DCAV, then $\mathcal{E}$ is not susceptible to CCPV-TE.
- C If $\mathcal{E}$ is susceptible to DCAV, then $\mathcal{E}$ is susceptible to CCPV-TE.
- D If $\mathcal{E}$ is not susceptible to DCDV, then $\mathcal{E}$ is not susceptible to CCAV.

Question 5

Anna :	a	b	d	c
Belle, Chris, David:	c	d	b	a
Edgar:	d	b	a	c

Can **c** be prevented from being the unique plurality winner by deleting exactly one voter?

- A Yes, by deleting Anna or Belle.
- B Yes, by deleting David or Edgar.
- C Yes, by deleting Belle or Chris.
- D No.

Question 6

Anna :	a	b	d	c
Belle, Chris, David:	c	d	b	a
Edgar:	d	b	a	c

Can **c** be prevented from being the unique plurality winner by deleting at most two voters?

- A Yes, by deleting Anna and Belle.
- B Yes, by deleting Belle and David.
- C Yes, by deleting Chris and Edgar.
- D No.

Question 7

Which of the following voting systems is immune to destructive control by deleting candidates?

- A Plurality
- B Condorcet
- C Borda
- D Approval