Ordinal Ballot Election Practice (2022)

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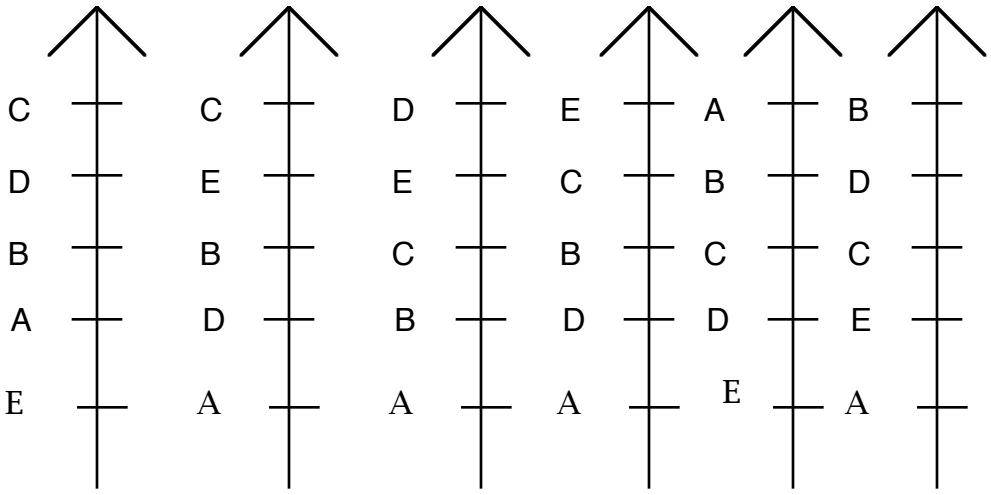
Given the election below (more preferred candidates towards the top):



Determine the winner (if there is one) using the methods. If a tie results break the tie in some reasonable way and explain the method used to break the tie.

a. Plurality

b. Condorcet

(As part of your solution draw a digraph which shows who beats whom in a two-way race. Use a directed edge from X to Y if X beats Y in a two-way contest.)

c. Borda count (to find the count for a candidate use the number of candidates below that person on the ordinal ballot)

(as part of your solution construct a pairwise preference matrix.)

d. Sequential run-off (IRV)

e (Standard) Run-off

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f. Borda count sequential run-off (This is often called Baldwin's method.)

g. Coombs (elimination based on last place votes.)

h. Bucklin

Bucklin works as follow: If no one wins a majority based of the first place votes, look at only first and second place votes, to see if someone now has a majority. Continue until a winner emerges. Note at some point several people may have a majority.

i. Median and above

Give a point to each candidate for each ballot the candiate appears on where the candidate's rank is at the median or above.

Note:

Do any of the methods pick the same winner? Will this always happen?

Investigation:

Add 1 to each of the number of votes in the election above and see how this might change the winner of the election using different methods.