

Quiz 1 Solutions

# voters	29	21	18	10	1
1st	D	A	B	C	C
2nd	C	C	A	B	B
3rd	A	B	C	A	D
4th	B	D	D	D	A

1. A: 21
B: 18
C: 11
D: 29

ranking D, A, B, C

2. A: $29(2) + 21(4) + 18(3) + 10(2) + 1(1) = 217$
 B: $29(1) + 21(2) + 18(4) + 10(3) + 1(3) = 176$
 C: $29(3) + 21(3) + 18(2) + 10(4) + 1(4) = 230$
 D: $29(4) + 21(1) + 18(1) + 10(1) + 1(2) = 167$

ranking C, A, B, D

3. There are 79 total votes \Rightarrow need 40 to win

round 0
 A 21
 B 18 + 11
 C 11
 D 29

\rightarrow
elim C

round 1
~~21~~
~~29~~ + 21
~~X~~
29

\rightarrow
elim A

round 2
~~X~~
~~50~~
~~X~~
29

ranking B, D, A, C

Bonus:

C vs A: 40 vs 39
 C vs B: 61 vs 18
 C vs D: 50 vs 29

C wins all pairwise comparisons and therefore is a Condorcet candidate.