

KEY

Practice Day 3

1) Given these preference schedules, identify the Plurality, Borda, Runoff, Sequential Runoff, and Condorcet winners.

| | | | | | | | | | | | |
|----|---|----|---|----|---|----|---|----|---|----|---|
| E | X | A | X | C | | C | | D | X | B | |
| A | X | D | X | B | | D | X | E | X | A | X |
| D | X | B | | A | X | B | | A | X | C | |
| B | | C | | D | X | E | X | C | | E | X |
| C | | E | X | E | X | A | X | B | | D | X |
| 14 | | 17 | | 19 | | 12 | | 16 | | 22 | |

Plurality: C
with 31 first place votes

Borda: A
see below
Runoff: B
remove E, D, A
B: 53
14+17+22
C: 47
19+12+16

Seq. Runoff: A
Remove E: 14
D: 16
B: 22

Condorcet: NONE
see work on next page

(on middle two preference schedules)

then
AVSC
A: 69
14+17+16+22
C: 31
19+12

Practice Day 3

| | | | | | |
|-----|-----|-----|-----|-----|-----|
| 5 E | 5 A | 5 C | 5 C | 5 D | 5 B |
| 4 A | 4 D | 4 B | 4 D | 4 E | 4 A |
| 3 D | 3 B | 3 A | 3 B | 3 A | 3 C |
| 2 B | 2 C | 2 D | 2 E | 2 C | 2 E |
| 1 C | 1 E | 1 E | 1 A | 1 B | 1 D |
| 14 | 17 | 19 | 12 | 16 | 22 |

2) If each voter approves of only the top three in his ranking, which is the Approval Voting winner?

* See page 3 (5th slide) for work + explanation *

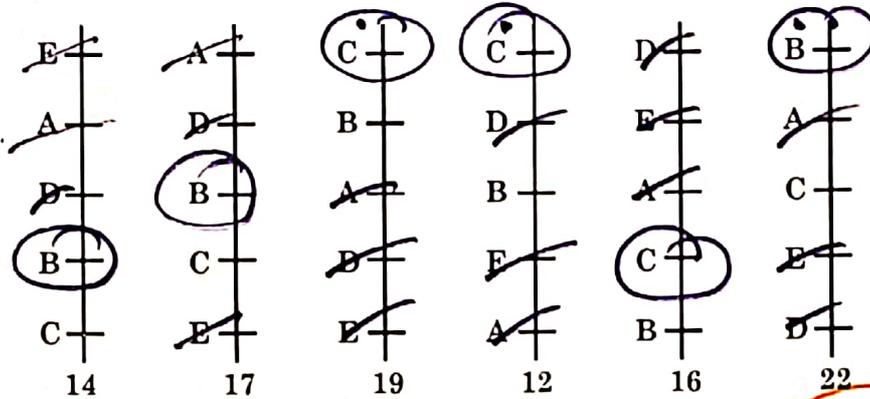
Borda method:

$$\begin{aligned}
 A &: 14(4) + 17(5) + 19(3) + 12(1) + 16(3) + 22(4) = 346 \\
 B &: 14(2) + 17(3) + 19(4) + 12(3) + 16(1) + 22(5) = 317 \\
 C &: 14(1) + 17(2) + 19(5) + 12(5) + 16(2) + 22(3) = 301 \\
 D &: 14(3) + 17(4) + 19(2) + 12(4) + 16(5) + 22(1) = 264 \\
 E &: 14(5) + 17(1) + 19(1) + 12(2) + 16(4) + 22(2) = 236
 \end{aligned}$$

Borda method: A wins with 346 points

Warm-up Day 3

Given these preference schedules, identify the Plurality, Borda, Runoff, Sequential Runoff, and Condorcet winners.



Plurality:

Borda:

Runoff:

Seq. Runoff:

Condorcet:

$B = 14 + 17 + 22$
53

$C = 19 + 12 + 16$
47

Warm-Up Continues ->

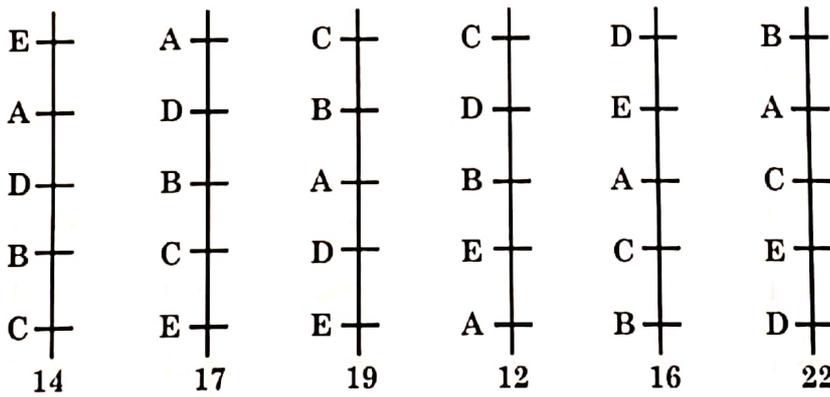
A vs C
31
19+12
A winner

| | A | B | C | D | E |
|---|---|---|---|---|---|
| A | X | B | A | A | A |
| B | X | X | B | D | B |
| C | X | X | X | C | C |
| D | X | X | X | X | D |
| E | X | X | X | X | X |

* MUST beat everyone else

Warm-up Day 3 ANSWERS

Given these preference schedules, identify the Plurality, Borda, Runoff, Sequential Runoff, and Condorcet winners.



Plurality: C

Borda: A

Runoff: B

Seq. Runoff: A

Condorcet: None

Runoff -> narrow down to C and B with most 1st place votes
see work on top of page

Check for Condorcet winners

Warm-up Day 3

2)

If each voter approves of only the top three in his ranking, which is the Approval Voting winner?

| | | | | | |
|--------|--------|--------|--------|--------|--------|
| E 14 | A 17 | C 19 | C 12 | D 16 | B 22 |
| A 14 | D 17 | B 19 | D 12 | E 16 | A 22 |
| D 14 | B 17 | A 19 | B 12 | A 16 | C 22 |
| B — | C — | D — | E — | C — | E — |
| C — | E — | E — | A — | B — | D — |
| 14 | 17 | 19 | 12 | 16 | 22 |

A: $14 + 17 + 19 + 16 + 22 = 88$ votes

B: $17 + 19 + 12 + 22 = 70$ votes

Approval:

A

Warm-up Day 3 ANSWERS

If each voter approves of only the top three in his ranking, which is the Approval Voting winner?

| | | | | | |
|-------|-------|-------|-------|-------|-------|
| E — | A — | C — | C — | D — | B — |
| A — | D — | B — | D — | E — | A — |
| D — | B — | A — | B — | A — | C — |
| B — | C — | D — | E — | C — | E — |
| C — | E — | E — | A — | B — | D — |
| 14 | 17 | 19 | 12 | 16 | 22 |

Approval: A