14	10	8	4	1	points
A	C	D	B	C	3
B	B	C	D	D	2
C	D	B	C	B	1
D	A	A	A	A	0

Using Borda

A: $14 \cdot 3 + 10 \cdot 0 + 8 \cdot 0 + 4 \cdot 0 + 1 \cdot 0 = 42$

B: $14 \cdot 2 + 10 \cdot 2 + 8 \cdot 1 + 4 \cdot 3 + 1 \cdot 1 = 69$ ← B wins

C: $14 \cdot 1 + 10 \cdot 3 + 8 \cdot 2 + 4 \cdot 1 + 1 \cdot 3 = 67$

D: $14 \cdot 0 + 10 \cdot 1 + 8 \cdot 3 + 4 \cdot 2 + 1 \cdot 2 = 44$

Plurality, Condorcet, Borda

Which method is better?

We'll discuss various criteria for judging?

2 criteria based on the general idea:

a good system should choose a solid popular candidate.

The Majority Criterion

If there is a candidate who ranks first place on a majority of ballots, then they should win the election.

The Condorcet Winner Criterion (CWC)

If there is a Cond. winner, then they should win the election.

We would like a system to satisfy both of these.

Are they satisfied by plurality, Condorcet, Borda?

Plurality

Majority Crit "if a cand. gets top ranking on a majority, then they should win"

In plurality system, we count # of top rankings, so if they have a majority in top position, they will get the most votes in plurality.

So plurality <u>does</u> satisfy Majority criterion.

	Maj	CWC
Plurality	✓	✗
Condorcet		
Borda	✗	✗

Does plurality satisfy CWC? NO

sometimes a Cond winner can lose if we use plurality.

Borda and Majority & CWC.

Borda: our 37 voters election:

A wins plurality
B wins Borda
C is Cond. winner

So Borda does not satisfy CWC.

Borda & Majority:

"if some candidate is top ranked by a majority, they should win"

This is not satisfied:

	3	2
2	A	B
1	B	C
0	C	A

here, A is top-ranked by a majority.

Borda:

A: $3 \cdot 2 + 2 \cdot 0 = 6$

B: $3 \cdot 1 + 2 \cdot 2 = 7$

C: $3 \cdot 0 + 2 \cdot 1 = 2$

B wins!