

## lecture notes

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### 1. Majority vs Plurality, Preference Schedule

Definition: **Plurality Winner**

Definition: **Majority Winner**

Ten Alaskans are asked to vote on the “best” of four Alaskan villages.

Voters: Bishop, Claman, Dunbar, Giessel, Hughes, Kawasaki, Myers, Olson, Tobin, Wilson  
Villages: Adak, Bettles, Chevak, Diomede

(a) Given the vote below, who wins? Did they win a **majority**?

voter	Bishop	Claman	Dunbar	Giessel	Hughes	Kawasaki	Myers	Olson	Tobin	Wilson
vote	A	A	A	A	B	B	B	C	C	D

(b) Suppose, in a different world, they voters voted this way. Now what?

voter	Bishop	Claman	Dunbar	Giessel	Hughes	Kawasaki	Myers	Olson	Tobin	Wilson
vote	A	A	A	B	B	B	C	C	C	D

(c) One option is to **collect more information**. See the new vote tally.

voter	Bishop	Claman	Dunbar	Giessel	Hughes	Kawasaki	Myers	Olson	Tobin	Wilson
1st choice	A	A	A	B	B	B	C	C	C	D
2nd choice	C	C	C	C	C	D	D	B	C	
3rd choice	B	B	B	D	D	D	B	B	A	B
4th choice	D	D	D	A	A	A	A	A	D	A

Observe that the vote tally in part (c) can be usefully summarized as follows:

# votes	
1st choice	
2nd choice	
3rd choice	
4th choice	

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### 2. Fairness Criteria

### 3. Condorcet Criterion

### 4. Condorcet Winner

5. Show that Chevak (C) is the Condorcet Winner in the vote tally summarized in part 1d (and copied below).

# votes	3	3	2	1	1
1st choice	A	B	C	C	D
2nd choice	C	C	D	B	C
3rd choice	B	D	B	A	B
4th choice	D	A	A	D	A