Majority and Condorcet Criteria

Majority Criterion

> If candidate X has a majority of the first-place votes, then candidate X should be the winner of the election.

The Plurality Method never violates the Majority Criterion.

Condorcet Criterion

> If there is a choice that in a head-to-head comparison is preferred by the voters over every other choice, then that choice should be the winner of the election.

Finding the Condorcet Candidate:
Do a Head-to-head comparison: Compare two candidates, then another two, until all pairs of candidates have been considered. Is there one candidate that is always preferred? If so, that candidate is the Condorcet Candidate.

Example:

Number of voters	**49**	**48**	**3**
First choice	**R**	**H**	**F**
Second choice	**H**	**S**	**H**
Third choice	**F**	**O**	**S**
Fourth choice	**O**	**F**	**O**
Fifth choice	**S**	**R**	**R**

We could compare the candidates one-on-one, but this would mean 24 head-to-head comparisons!
Instead, notice candidate H is near the top and just look at comparisions involving H.

H vs. R	49	48	3
1st	R	H	H
2nd	H	R	R

H vs. F	49	48	3
1st	H	H	F
2nd	F	F	H

H vs. O	49	48	3
1st	H	H	H
2nd	O	O	O

H vs. S	49	48	3
1st	H	H	H
2nd	S	S	S

When we compare just H and R, 49 people prefer R to H and 51 prefer H to R.
When we compare just H and F, 97 people prefer H to F and 3 prefer H to F.
When we compare just H and O, 100 people prefer H to O.
When we compare just H and S, 100 people prefer H to S.
Notice that H wins the head-to-head comparisons against other candidates.
Thus, H is the Condorcet Candidate.

Number of voters	**49**	**48**	**3**
First choice	**R**	**H**	**F**
Second choice	**H**	**S**	**H**
Third choice	**F**	**O**	**S**
Fourth choice	**O**	**F**	**O**
Fifth choice	**S**	**R**	**R**

We know that the Condorcet Candidate is H, but R wins under Plurality. This means that the Plurality Method can violate the Condorcet Criterion. (The violation does not always happen, but it can.
Notice also that R loses head-to-head comparisons against other candidates.
This is our first example of being able to measure why the Plurality Method is not always fair.

Insincere Voting- a problem with plurality voting when a voter does not vote for his or her first choice because he fears that doing so will benefit a candidate he does not want to win. This is seen when a third party makes a strong showing- see examples of US Presidential elections involving Ralph Nader.