(1) [From *Excursions in Modern Mathematics*] An election is held in which the voting preferences are as follows

# of ballots:	14	10	8	4	1
Ballot order					
1st choice	A	C	D	B	C
2nd choice	B	B	C	D	D
3rd choice	C	D	B	C	B
4th choice	D	A	A	A	A

(a) Who wins if the ballots are counted by the **Plurality** method?
(b) Who wins in the **Runoff Election** method?
(c) Who wins in the **Sequential Runoff** method (sometimes also called the **Plurality with Elimination** method or the **Hare** method)? (This method is now used to elect public officials in Australia, Malta, the Republic of Ireland, and Northern Ireland. It was also the method used to choose Australia as the site of the Summer 2000 Olympics.)
(d) Who wins in the **Borda Count** method? (You may give 0 points for last place, 1 place for next to last place, etc.)
(e) Who wins in the **Condorcet** method (also known as the **Pairwise Comparison** method)?
(f) Who do you think should win this election? Why?

(2) [From *For All Practical Purposes*] Answer questions (a) through (f) from question 1 for the following election:

# of ballots:	3	1	1	1	1	1	1
Ballot order							
1st choice	A	A	B	B	C	C	D
2nd choice	D	B	C	C	B	D	C
3rd choice	B	C	D	A	D	B	B
4th choice	C	D	A	D	A	A	A

(3) [From *For All Practical Purposes*] In the 1980 U.S. Senate race in New York between Alfonse D'Amato (D, a conservative), Elizabeth Holtzmann (H, a liberal), and Jacob Javits (J, also a liberal), exit polls suggested that voters ranked the candidates as follows:

% of ballots:	22%	23%	15%	29%	7%	4%
Ballot order						
1st choice	D	D	H	H	J	J
2nd choice	H	J	D	D	H	D
3rd choice	J	H	J	J	D	H

Discuss the results in terms of the voting methods in problems 1 and 2.

(4)) [From *For All Practical Purposes*] In the 2000 presidential election in Florida the final results were as follows (disregarding contested votes):

Candidates	Number of Votes	Percentage of Votes
Bush	2,911,872	49
Gore	2,910,942	49
Nader	97,419	2
Buchanon	17,472	0

Making reasonable assumptions about voters' preferences, discuss how the election might have turned out under the different voting methods in the above problems.