This project will deal with the 1998 Minnesota gubernatorial election in which ex-wrestler Jesse Ventura was the surprise winner. The three major candidates were Norm Coleman (Republican), Hubert H. Humphrey III (Democrat), and Jesse Ventura (Reform). The voters in Minnesota cast votes as shown below. These numbers do not show the votes for minor candidates, and the percentages have been rounded to the nearest whole percent.

<table>
<thead>
<tr>
<th>Candidate</th>
<th>1st Place Votes</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coleman</td>
<td>717,350</td>
<td>35</td>
</tr>
<tr>
<td>Humphrey</td>
<td>587,528</td>
<td>28</td>
</tr>
<tr>
<td>Ventura</td>
<td>773,713</td>
<td>37</td>
</tr>
</tbody>
</table>

Your Project should answer these questions in complete sentences, showing necessary calculations:

1. Suppose that each voter had given a complete preference ballot listing all three candidates in an order of preference. What are the possible preference ballots in this election?

2. Create a hypothetical preference schedule for this election wherein you assign a percent of voters to each possible preference ballot (column of the schedule) in a way that is consistent with the table of first place percentages above. That is, the percents you assign to the ballots (columns) with Coleman as first choice should total 35 percent, the percents you assign to the ballots with Humphrey as first choice should total 28 percent, and the percents you assign to the ballots with Ventura as first choice should total 37 percent. Be sure that in your preference schedule each possible preference ballot is assigned at least one percent.

3. Using the preference schedule you constructed in Part 2, decide who would have won Minnesota’s 1998 gubernatorial election using each of the following voting methods:
   (a) Plurality
   (b) Borda Count (Give 3 points for each percent of first place votes, 2 points for each percent of second place votes, and 1 point for each percent of third place votes.)
   (c) Plurality with Elimination
   (d) Pairwise Comparison

4. If Coleman did not win under any voting method in Part 3, then assign new numbers of percents to the possible ballots, in a way consistent with the data in the original table, (i.e. so that each candidate has the same total first place percents as shown in the chart above) so that Coleman does win by at least one of the methods listed in Part 3. Explain how this schedule causes Coleman to win.

5. If Humphrey did not win under any voting method in Parts 3 or 4, then assign new numbers of percents to the possible ballots, in a way consistent with the data in the original table, so that Humphrey does win by at least one of the methods listed in Part 3. Explain how this schedule causes Humphrey to win.

6. Does one of your preference schedules constructed in the parts above show a violation of the Condorcet Fairness Criterion by the Plurality with Elimination Method? If so, explain why. If not, then construct a preference schedule (consistent with the given data in the original table) that does show such a violation, and explain why it does.

7. Does one of your preference schedules in the parts above show a violation of the Independence of Irrelevant Alternatives Criterion by the Plurality Method? If so, explain why. If not, then construct a new preference schedule (consistent with the given data in the original table) that does show a violation of the Independence of Irrelevant Alternatives Criterion by the Plurality Method, and explain why it does.

Be sure to submit the Cover Sheet with your Project and adhere to the rules in the box at the bottom of the Cover Sheet!