Name: ————————————————————————— score:——— / 10

   There are 10 points possible on this quiz. No aids (book, notes, etc.) are permitted. You may use a non-programmable calculator. **Show all work and supporting calculations for full credit. Explain how you get your answers.**

1. (5 points) The student government is holding elections for president. There are four candidates (A,B,C and D for convenience). The preference schedule is below.

number of voters	70	60	50	110	10
1st choice	C	B	C	D	A
2nd choice	D	A	A	B	C
3rd choice	B	D	B	C	B
4th choice	A	C	D	A	D

For each of the following, provide supporting calculations.

   (a) How many voters voted in this election? —————————

   (b) How many voters are needed for a majority? —————————

   (c) How many votes are needed for a plurality? —————————

   (d) Find a winner under the plurality method. —————————

2. (5 points) Below is the same preference schedule.

number of voters	70	60	50	110	10
1st choice	C	B	C	D	A
2nd choice	D	A	A	B	C
3rd choice	B	D	B	C	B
4th choice	A	C	D	A	D

(a) In a one-to-one comparison, who is preferred, candidate A or candidate D? (You must show your calculation.)

Candidate _____ is preferred.

(b) Explain why A cannot be the Condorcet winner.

(c) Show that candidate D is the Condorcet winner. (You must show your work.)