MA 110 Quiz 1 ANSWERS

Print Code Number:_____ (Do NOT print name or student number.)

Answer questions in the space provided. Show your work. Use the reverse of this sheet for work, if necessary.

Table 1.1

Table 1.1 describes an election with four candidates (A, B, C, and D) and the preference schedule:

Number of Votes	8	5	4	3
1st Choice	B	D	C	~~A~~
2nd Choice	D	~~A~~	~~A~~	B
3rd Choice	C	C	D	C
4th Choice	~~A~~	B	B	D

1. In Table 1.1, which candidate wins the election by the Borda count method?

A: 8 + 15 + 12 + 12 = 47
B: 32 + 5 + 4 + 9 = 50
C: 16 + 10 + 16 + 6 = 48 Winner is D.
D: 24 + 20 + 8 + 3 = 55

2. In Table 1.1, which candidate wins the election by the plurality-with-elimination method?

Round	~~A~~	B	C	D	
1	~~3~~	8	4	5	3 votes for A transfer to B.
2		11	4	5	Winner is B. (No need for third round.)

3. If the election in Table 1.1 is decided by the Borda count method, does that violate the majority criterion? Explain.

No. No candidate receives a majority of first place votes. (A majority would be 11.) So, the majority criterion is satisfied because the "if" part doesn't apply to this election.

4. An election is to be decided using the plurality method. There are four candidates and 118 voters. What is the smallest number of votes that a winning candidate can have, if there can be no ties for the winner? Choose the best answer below by circling it.
   a. 60
   b. 59
   c. 31 (circled) 31 + 29 + 29 + 29 = 118 No smaller number works.
   d. 30
   e. 29