Math 1116, Quiz #1, Spring 2013 Name KEY

Instructions: Answer the following questions on separate numbered page(s) and attach work to this page. Indicate for each problem on this sheet which page the answer to the question can be found, and indicate the answers clearly in your work (you can circle the answer, for instance).

1. Consider the election tables below.

# of Voters	12	5	4	9	6	1
1st Choice	D	A	D	A	D	A
2nd choice	C	C	A	C	A	B
3rd choice	B	D	B	B	C	D
4th choice	A	B	C	D	B	C

a. Find the winner according to the plurality method. Do any of the candidates have a majority?

$12+5+4+9+6+1 = 37/2 = 18.5$ (20) 19 needed for majority

A = 5+9+1

B = 0

C = 0

D = 12+4+6 = 22 D has a majority D wins plurality method

b. Find the winner according to the Borda count method. Does this counting method violate the majority criterion?

A = 12×1 + 5×4 + 4×3 + 9×4 + 6×3 + 1×4 = 102

B = 12×2 + 1×5 + 4×2 + 9×2 + 6×1 + 3×1 = 64

C = 12×3 + 5×3 + 4×1 + 9×3 + 6×2 + 1×1 = 95

D = 12×4 + 5×2 + 4×4 + 9×1 + 6×4 + 2×1 = 109

D wins by Borda Count

There is no majority violation. D has a majority of votes & D won by this method as well.