

Borda Count Method:

Points assigned to N candidates. 1st place: N points

2nd place: N-1 pts.

3rd place: N-2 pts. etc.

An election is held to choose the chair of a department at a university. The candidates are Professors Argand, Brandt, Chavez, and Dietz (A, B, C, and D for short). The following table gives the preference schedule for the election.

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

1. Use the Borda count method to find the winner of the election.

$$A = 8 + 12 + 8 + 4 = 32$$

$$B = 24 + 4 + 4 + 1 = 33$$

$$C = 16 + 16 + 6 + 2 = 40$$

$$D = 32 + 8 + 2 + 2 = 44$$

D

2. Suppose that before the votes are counted, candidate B is declared ineligible. Find the new preference schedule for an election without candidate B.

	8	4	2	1
1 st	D	C	A	A
2 nd	C	A	C	C
3 rd	A	D	D	D

3. Use the Borda count method to find the winner of the new election without candidate B.

$$A = 8 + 8 + 4 + 2 = 22$$

$$C = 16 + 12 + 4 + 2 = 34$$

$$D = 24 + 4 + 2 + 1 = 31$$

C

4. Does this election violate the majority criterion?

#1 - no

5. Does this election violate the Condorcet criterion?

#1 - no

6. An election is held among four candidates (A, B, C, D). Each column in the following preference schedule shows the percentage of voters voting that way. Find the winner of the election under the Borda count method. (Hint: The winner is independent of the number of voters.)

Number of Voters	40%	35%	15%	10%
4 3 2 1	D	B	A	A
	C	A	C	D
	A	C	D	C
	B	D	B	B

$$A: .8 + 1.05 + .6 + .4 = 2.85$$

$$B: .4 + 1.4 + .15 + .1 = 2.05$$

$$C: 1.2 + .7 + .45 + .2 = 2.55$$

$$D: 1.6 + .35 + .30 + .3 = 2.55$$

Tie: C + D

An election is held with four candidates (A, B, C, and D) and 85 voters. The winner of the election is determined by using the Borda count method.

7. What is the maximum number of points a candidate can receive?

4 pts.

8. What is the minimum number of points a candidate can receive?

1 pt.

9. How many points are given out by one ballot?

$$4 + 3 + 2 + 1 = 10 \text{ pts.}$$

10. What is the total number of points given out to all four candidates?

$$10(85) = 850 \text{ pts.}$$

11. If A gets 300 points, B gets 240 points, and C gets 130 points, how many points did D get?

180

12. An election is held with five candidates A, B, C, D, and E and 18 voters. The winner is determined by using the Borda count method. Suppose you are given the following point totals: 58 points for A, 54 points for B, 48 points for D, and 86 points for E. The point totals for C are missing. Find the winner of the election.

$$5 + 4 + 3 + 2 + 1 = 15 \text{ pts. per ballot}$$

$$18(15) = 270 \text{ total pts}$$

$$C = 270 - 58 - 54 - 48 - 86 = 24 \text{ pts}$$

Ch 1: 18-26 evens, 118d

Winner is: E with 86 pts.