

Consider the preference schedule for a vote taken by a draft committee for newest NFL expansion team, the Lexington UKer's. The five candidates they are trying to rank for the draft are: Allen, Byers, Castillo, Dixon, and Evans. This election will be decided by way of Pairwise Comparisons.

Number of Voters	2	6	4	1	1	4	4
1st	A	B	B	C	C	D	E
2nd	D	A	A	B	D	A	C
3rd	C	C	D	A	A	E	D
4th	B	D	E	D	B	C	B
5th	E	E	C	E	E	B	A

22 voters

(1) How many comparisons must be made in order to determine the winner?

$$\frac{5(4)}{2} = \frac{20}{2} = \boxed{10}$$

(2) What is the maximum number of points that the winner could receive?

$$5 - 1 = \boxed{4}$$

(3) Complete the table of Comparisons.

Number of Voters	Votes	Winner/Points
A v B	A(7) B(15)	B (1)
A v C	A(16) C(6)	A (1)
A v D	A(13) D(9)	A (1)
A v E	A(18) E(4)	A (1)
B v C	B(10) C(12)	C (1)
B v D	B(11) D(11) tie	B (½) D (½)
B v E	B(14) E(8)	B (1)
C v D	C(12) D(10)	C (1)
C v E	C(10) E(12)	E (1)
D v E	D(19) E(4)	D (1)

(4) How many total points does each player win?

- A - 3 pts
- B - 2½ pts
- C - 2 pts
- D - 1½ pts
- E - 1 pt

A = Allen wins

(5) Does this method agree with the Plurality Method?

No - with Plurality Byers wins with 10 votes

(6) Does this method agree with the Borda Count Method?

Yes - Allen wins both.

$$\text{Allen} - 5(2) + 4(14) + 3(2) + 2(0) + 1(4) = 76$$

$$\text{Byers} - 5(10) + 4(1) + 3(0) + 2(7) + 1(4) = 72$$

$$\text{Castillo} - 5(2) + 4(4) + 3(8) + 2(4) + 1(4) = 62$$

$$\text{Dixon} - 5(4) + 4(3) + 3(8) + 2(7) + 1(0) = 70$$

$$\text{Evans} - 5(4) + 4(0) + 3(4) + 2(4) + 1(10) = 50$$