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Assessment 1
Part 5

a) *Candidate B wins using plurality voting procedure, is that possible.*

Looking the table below, the cells highlighted in yellow were missing. But it can be clearly seen that candidate B is winning when using the plurality voting technique, the explanation is that candidate B has the largest number received by voting of "4" from the participants, therefore, it wins.

Voters	Preferences of Candidates			
	A	**B**	**C**	**D**
1	2	4	1	4
2	1	3	3	4
3	1	4	3	4
4	1	4	3	4
5	2	4	3	1
6	4	3	1	2
7	1	4	1	3
8	3	4	1	3
9	4	1	2	1
10	3	4	4	1
11	3	2	4	3
12	4	2	1	1
13	2	4	1	2
14	2	4	4	2
15	3	4	3	1

b) *Candidate C wins using the runoff voting procedure, if that is possible.*

Looking at the table blow, the two highest voted candidates are C with 8 given "4", the second highest candidate is candidate "B" with 6 given "4" high rank.

The two lowest candidates are then A and D respectfully. Where A is the third highest and D is with the lowest rank. By getting rid of candidate D with only three given "4", we are left with A, B, and C. Looking at A it can now be eliminated as B & C are higher is rankings.

Finally, when left with only two candidates B & C, it can be seen that C has 8 "4"s and B can only 6. Therefore, Candidate C wins with the runoff voting

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Voters	*Preferences of Candidates*			
	A	**B**	**C**	**D**
1	2	2	4	4
2	1	3	4	1
3	1	2	3	4
4	1	3	3	4
5	1	4	4	1
6	4	3	1	1
7	3	4	1	3
8	3	4	1	3
9	4	1	4	1
10	3	4	4	1
11	4	2	4	3
12	4	2	4	1
13	2	1	1	2
14	3	4	4	2
15	4	1	3	1

d) *Candidate D wins using Borda Count voting procedure, if that is possible.*

The table below shows that the most preferred candidate is D is the most preferable candidate and candidate A is the least preferrable. It can be proved using the following steps.

A: 2+1+1+1+1+4+3+3+4+3+4+4+2+2+4 = 39

B: 2+3+2+3+4+3+4+4+1+4+2+2+1+4+1 = 40

C: 4+4+3+3+4+1+1+1+4+4+4+4+1+4+3 = 45

D: 4+4+4+4+1+4+4+4+1+1+4+4+4+4+4 = 51

Therefore, it can be seen that the highest value is with D. Winning the procedure using the Borda Count.

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Voters	Preferences of Candidates			
	A	B	C	D
1	2	2	4	4
2	1	3	4	4
3	1	2	3	4
4	1	3	3	4
5	1	4	4	1
6	4	3	1	4
7	3	4	1	4
8	3	4	1	4
9	4	1	4	1
10	3	4	4	1
11	4	2	4	4
12	4	2	4	1
13	2	6	1	4
14	3	4	4	4
15	4	1	3	4