VOTING HOMEWORK

TEXT: 11.1, 11.2

LAST NAME	FIRST NAME	DATE

1. 2 Construct a preference schedule out of the given preference ballots.

Candidates	**Ballots with Rankings**															
Vanilla	1	2	2	2	3	2	2	3	1	1	2	3	1	2	3	2
Chocolate	2	3	1	1	1	3	1	2	2	2	1	2	2	1	2	3
Mint	3	1	3	3	2	1	3	1	3	3	3	1	3	3	1	1

2. Construct a preference schedule out of the given preference ballots, for candidates Moesha [M], Naomi [N], Abey [A], and Jorge [J].

Rankings	**Ballots with Candidates**																			
1st choice	M	M	A	J	J	M	M	M	M	A	J	M	M	J	M	M	A	J	J	M
2nd choice	A	N	N	A	A	A	N	A	N	N	A	A	N	A	A	N	N	A	A	N
3rd choice	N	A	M	M	M	N	A	N	A	M	M	N	A	M	N	A	M	M	M	A
4th choice	J	J	J	N	N	J	J	J	J	J	N	J	J	N	J	J	J	N	N	J

A sample of 200 grocery store patrons were asked to rate some of the popular apple varieties.

Apple	**Ballots with Rankings**					
Gala	1	2	4	2	5	4
Macoun	2	5	5	1	2	3
Pink Lady	3	3	1	4	4	2
Fuji	4	1	2	5	3	1
Honey Crisp	5	4	3	3	1	5
Number of Votes	**42**	**11**	**33**	**28**	**49**	**37**

3. Using the plurality voting, which type of apple is the winner, and with how many votes?

Use the Borda count method to determine the winner. Show all work by computing the total number of Borda points for each contestant.

4. Gala:

5. Macoun:

6. Pink Lady:

7. Fuji:

8. Honey Crisp:

9. Winner:

Use the Pairwise Comparison (a.k.a Copland's method) to determine the winner. Show the result of every head-to-head by computing and stating the number of voters who prefer one choice over the other.

Apple	**Ballots with Rankings**					
Gala	1	2	4	2	5	4
Macoun	2	5	5	1	2	3
Pink Lady	3	3	1	4	4	2
Fuji	4	1	2	5	3	1
Honey Crisp	5	4	3	3	1	5
Number of Votes	**42**	**11**	**33**	**28**	**49**	**37**

10. Gala versus Macoun

11. Gala versus Pink Lady

12. Gala versus Fuji

13. Gala versus Honey Crisp

14. Macoun versus Pink Lady

15. Macoun versus Fuji

16. Macoun versus Honey Crisp

17. Pink Lady versus Fuji

18. Pink Lady versus Honey Crisp

19. Fuji versus Homey Crisp

20. Winner:

Find the winner using the Plurality With Elimination (a.k.a. Instant Runoff Voting). Show the re-ranked preference schedule after each elimination.

Apple	**Ballots with Rankings**					
Gala	1	2	4	2	5	4
Macoun	2	5	5	1	2	3
Pink Lady	3	3	1	4	4	2
Fuji	4	1	2	5	3	1
Honey Crisp	5	4	3	3	1	5
Number of Votes	**42**	**11**	**33**	**28**	**49**	**37**

21.

Apple	**Ballots with Rankings**					
Number of Votes	**42**	**11**	**33**	**28**	**49**	**37**

22.

Apple	**Ballots with Rankings**					
Number of Votes	**42**	**11**	**33**	**28**	**49**	**37**

23.

Apple	**Ballots with Rankings**					
Number of Votes	**42**	**11**	**33**	**28**	**49**	**37**

24. Winner:

A large sample of gamers is asked to rank some titles by how much replay value they have, the results are summarised below.

Games	**Ballots with Rankings**						
Minecraft	1	5	1	6	4	3	4
Dark Souls	2	6	4	1	3	2	3
Fortnite	5	1	2	5	6	5	5
Katamari Damacy	3	3	6	3	1	1	2
Fallout	4	4	3	2	2	6	6
Among Us	6	2	5	4	5	4	1
Number of Votes	**441**	**479**	**438**	**450**	**469**	**445**	**472**

25. Using the plurality voting, which game is the winner of the vote, and with how many votes?

26. Is the plurality winner also a majority winner? Explain.

Use the Borda count method to determine the winner. Show all work by computing the total number of Borda points for each contestant.

27. Minecraft:

28. Dark Souls:

29. Fortnite:

30. Katamari Damacy:

31. Fallout:

32. Among Us:

33. Winner:

Use the Pairwise Comparison (a.k.a Copland's method) to determine the winner. Show the result of every head-to-head by computing and stating the number of voters who prefer one choice over the other.

Games	**Ballots with Rankings**						
Minecraft	1	5	1	6	4	3	4
Dark Souls	2	6	4	1	3	2	3
Fortnite	5	1	2	5	6	5	5
Katamari Damacy	3	3	6	3	1	1	2
Fallout	4	4	3	2	2	6	6
Among Us	6	2	5	4	5	4	1
Number of Votes	**441**	**479**	**438**	**450**	**469**	**445**	**472**

34. Minecraft vs. Dark Souls:

35. Minecraft vs. Fortnite:

36. Minecraft vs. Katamari:

37. Minecraft vs. Fallout:

38. Minecraft vs. Among Us:

39. Dark Souls vs. Fortnite:

40. Dark Souls vs. Katamari:

41. Dark Souls vs. Fallout:

42. Dark Souls vs. Among Us:

43. Fortnite vs. Katamari:

44. Fortnite vs. Fallout:

45. Fortnite vs. Among Us:

46. Katamari vs. Fallout:

47. Katamari vs. Among Us:

48. Fallout vs. Among Us:

49. Winner:

Find the winner using the Plurality With Elimination (a.k.a. Instant Runoff Voting). Show the re-ranked preference schedule after each elimination.

Games	**Ballots with Rankings**						
Minecraft	1	5	1	6	4	3	4
Dark Souls	2	6	4	1	3	2	3
Fortnite	5	1	2	5	6	5	5
Katamari Damacy	3	3	6	3	1	1	2
Fallout	4	4	3	2	2	6	6
Among Us	6	2	5	4	5	4	1
Number of Votes	**441**	**479**	**438**	**450**	**469**	**445**	**472**

50.

Games	**Ballots with Rankings**						
Number of Votes	**441**	**479**	**438**	**450**	**469**	**445**	**472**

51.

Games	**Ballots with Rankings**						
Number of Votes	**441**	**479**	**438**	**450**	**469**	**445**	**472**

52.

Games	**Ballots with Rankings**						
Number of Votes	**441**	**479**	**438**	**450**	**469**	**445**	**472**

53.

Games	**Ballots with Rankings**						
Number of Votes	**441**	**479**	**438**	**450**	**469**	**445**	**472**

54. Winner:

Answers

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