

VOTING HOMEWORK

TEXT: 11.1, 11.2

LAST NAME	FIRST NAME	DATE
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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

1. 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.

2. Gala:

3. Macoun:

4. Pink Lady:

5. Fuji:

6. Honey Crisp:

7. 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

8. Gala versus Macoun

13. Macoun versus Fuji

9. Gala versus Pink Lady

14. Macoun versus Honey Crisp

10. Gala versus Fuji

15. Pink Lady versus Fuji

11. Gala versus Honey Crisp

16. Pink Lady versus Honey Crisp

12. Macoun versus Pink Lady

17. Fuji versus Honey Crisp

18. 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
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19.

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

20.

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

21.

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

22. 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						
	1	5	1	6	4	3	4
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

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

24. 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.

25. Minecraft:

26. Dark Souls:

27. Fortnite:

28. Katamari Damacy:

29. Fallout:

30. Among Us:

31. 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						
	1	5	1	6	4	3	4
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

32. Minecraft vs. Dark Souls: **37.** Dark Souls vs. Fortnite: **42.** Fortnite vs. Fallout:

33. Minecraft vs. Fortnite: **38.** Dark Souls vs. Katamari: **43.** Fortnite vs. Among Us:

34. Minecraft vs. Katamari: **39.** Dark Souls vs. Fallout: **44.** Katamari vs. Fallout:

35. Minecraft vs. Fallout: **40.** Dark Souls vs. Among Us: **45.** Katamari vs. Among Us:

36. Minecraft vs. Among Us: **41.** Fortnite vs. Katamari: **46.** Fallout vs. Among Us:

47. 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

48.

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

49.

Games	Ballots with Rankings						
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

52. Winner:

ANSWERS