

MA111-003
Some Questions for Chapter 1
EXPANDED VERSION
(For Your Use — Not to be Submitted)

1. What is a preference ballot? How many different possible kinds of preference ballots can there be if there are 6 candidates? Why?
2. What is a preference schedule?
3. How do you decide an election using the Plurality Method?
4. How do you decide an election using the Borda Count Method?
5. How do you decide an election using the Plurality-with-Elimination Method?
6. How do you decide an election using the Method of Pairwise Comparisons?
7. What is a plurality candidate? Does every preference schedule have a plurality candidate?
8. What is a majority candidate? Does every preference schedule have a majority candidate?
9. What is a Condorcet candidate? Does every preference schedule have a Condorcet candidate?
10. What is the Majority Criterion? Why does the Plurality Method satisfy the Majority Criterion? Why does the Method of Pairwise Comparisons satisfy the Majority Criterion?
11. What is the Condorcet Criterion? Why does the Method of Pairwise Comparisons satisfy the Condorcet Criterion?
12. What is the Monotonicity Criterion?
13. What is the Independence-of-Irrelevant Alternatives Criterion?

14. What is insincere voting?

15. How many pairwise comparisons are there when you have 8 candidates? Why?

16. What is the sum $1 + 2 + 3 + \dots + 1000$? If you just use a formula, where does the formula come from?

17. If there are 6 candidates and 100 voters, how many points are awarded in the Borda Method on each ballot? How many total points are awarded for the entire preference schedule? Why?

18. If there are 100 voters and 5 candidates, at least how many votes must a particular candidate receive in order to guarantee receiving a majority of the votes? At least how many votes must a particular candidate receive in order for there to be a possibility of winning by a plurality?

19. What does Arrow's Theorem say (see page 28)?

20. Can you work each homework and quiz problem *correctly* and *quickly*, providing explanations and justifications, without looking at the textbook?
21. Have you carefully studied the material in Sections 1.1–1.5?
22. Have you carefully studied the slides on Sections 1.1–1.5?
23. Some other problems to try: 1, 5, 6, 8, 9, 13, 15/ 16, 17, 20, 22, 26, 29, 34, 35, 40, 41, 51, 53, 55, 56, 59, 61, 62, 63, 64, 72.