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Problem Set 3

1. Problem 11.6.
2. Problem 11.7.
3. Problem 11.9.
4. Problem 11.10.
5. Problem 11.12
6. Problem 11.14
7. Problem A1.1, but change the first two items asked for. Instead of finding "C union A" and "C union B," please find "C intersect A" and "C intersect B." These are more interesting sets, in my mind, than what the book asks for.
8. Problem A1.2.
9. Problem A1.3
10. Problem A1.6.
11. Problem 12.1.
12. Problem 12.2.
13. Problem 12.3.
14. Problem 12.5. Having proved the triangle inequality for pairs of numbers in Problem 12.3, you can use that result in proving this theorem for trios of real numbers.
15. Problem 12.6.
16. Problem 12.9.
17. Problem 12.10.
18. Problem 12.11.
19. Problem 12.14.
20. Problem 12.15.
21. Problem 12.22. Just use Theorems 12.8 and 12.9 to prove Theorem 12.10. You can omit the part asking for additional direct proofs using the definition of a closed set.
22. Problem 12.25. To be clear, the problem is asking about the three examples of sets listed in the first sentence of the last paragraph of section 12.4 on page 269.
23. Problem 12.27.
24. Problem 12.29.
25. Problem 12.31.