Practice 2.1 Sequences

1. 5
2. 5
3. 2
4. 5
5. 0
6. 1
7. diverges
8. 3/2; converges
9. 0; converges
10. e^k; converges
11. 0; converges
12. 0; converges
13. 0; converges
14. diverges
15. 0; converges
16. 0; converges
17. diverges
18. 0; converges

Practice 2.2 Series & Convergence

1. geometric test r = 3/2

2. geometric test r = 1.055

3. nth term test for div. limit $\neq 0$ (=1)

4. nth term test for div. limit $\neq 0$ (=1)

5. nth term test for div. limit $\neq 0$ (=1/2)

6. diverges

7. converges

8. diverges

9. converges

10. diverges

11. diverges

12. diverges

13. diverges

Practice 2.3 Integral & P-series Test

1. diverges
2. converges
3. converges
4. diverges
5. diverges
6. diverges
7. converges
8. converges
9. diverges
10. diverges
11. the terms all not all positive
12. the function $y = \frac{2 + \sin x}{x}$ is not decreasing for all $x \geq 1$
13. converges
14. diverges
15. diverges
16. diverges
17. converges
18. converges

Practice 2.4 Comparison Tests

1. converges
2. diverges
3. converges
4. diverges
5. converges
6. converges
7. diverges
8. diverges
9. converges
10. diverges
11. converges
12. diverges
13. diverges

Review 2.5 (Review of 2.1-2.4)

1. diverges (p-series test)

2. converges (geometric series test)

3. converges (direct comparison test)

4. converges (limit comparison test)

5. diverges (nth term test for div)

6. converges (telescoping series test)

7. converges (integral test)

8. converges (limit comparison test)

Practice 2.7 Alternating Series

1. diverges
2. diverges
3. diverges
4. diverges
5. converges
6. converges
7. converges conditionally
8. diverges
9. converges absolutely
10. converges absolutely
11. diverges

Practice: Ratio & Root Test

1. converges
2. converges
3. converges
4. diverges
5. converges
6. converges
7. diverges
8. diverges
9. converges
10. converges
11. limit = 1
12. limit = 1

Review: Convergence of Series

1. converges
2. diverges
3. converges
4. converges
5. diverges
6. diverges
7. diverges
8. converges
9. converges
10. diverges
11. converges
12. converges
13. converges
14. converges
15. converges
16. diverges

Review of Sequences and Series

1. converges
2. converges
3. converges
4. diverges
5. converges
6. converges
7. 2
8. $\frac{9}{13}$
9. $\frac{\pi^2}{\pi - e}$
10. converges
11. converges
12. converges
13. diverges
14. diverges
15. converges
16. converges
17. converges
18. diverges
19. diverges
20. converges
21. converges
22. converges
23. diverges
24. diverges
25. converges
26. converges
27. diverges
28. converges
29. diverges
30. converges
31. converges
32. converges
33. converges
34. converges conditionally
35. converges absolutely
36. diverges
37. converges absolutely
38. converges absolutely
39. converges absolutely