

Math5700
Homework #13 Key

1. $a_1 = 1$, $a_2 = \frac{-1}{2}$, $a_3 = \frac{1}{3}$, converges to 0
2. $a_1 = \frac{5}{e^2}$, $a_2 = \frac{10}{e^4}$, $a_3 = \frac{15}{e^6}$, converges to 0
3. $a_1 = \frac{\cos^2 1}{3}$, $a_2 = \frac{\cos^2 2}{9}$, $a_3 = \frac{\cos^2 3}{27}$, converges to 0
4. $a_1 = 0$, $a_2 = \frac{\ln 2}{e^2}$, $a_3 = \frac{\ln 3}{e^3}$, converges to 0
5. $a_1 = \frac{2}{3}$, $a_2 = \frac{8}{15}$, $a_3 = \frac{18}{35}$, converges to $\frac{1}{2}$
6. converges conditionally
7. converges absolutely
8. diverges
9. converges absolutely
10. diverges
11. converges absolutely
12. converges absolutely
13. converges absolutely
14. diverges
15. converges absolutely
16. converges absolutely
17. converges absolutely
18. diverges
19. converges absolutely
20. converges absolutely
21. converges absolutely
22. converges absolutely
23. diverges
24. diverges
25. converges absolutely
26. converges absolutely
27. converges absolutely
28. (-3, 3)
29. [-12, -8)
30. $\left[\frac{-1}{16}, \frac{1}{16} \right]$
31. $x \in \mathbb{R}$
32. $x \in \mathbb{R}$