1 Chapter 12

12.1.4: $1, \frac{3}{5}, \frac{1}{2}, \frac{5}{11}, \frac{3}{7}$.

12.1.6: $2, 8, 48, 384, 3840$.

12.1.8: $4, \frac{4}{3}, 4, \frac{4}{3}, 4$.

12.1.10: $a_n = \frac{1}{2n}$.

12.1.12: $a_n = (-1)^n \frac{n}{(n+1)^2}$.

12.1.14: $a_n = 3 + (-1)^{n+1} 2$.

12.1.16: Converges to $\frac{1}{3}$.

12.1.18: Converges to 1.

12.1.20: Diverges.

12.1.22: Diverges.

12.1.24: Converges to 1.

12.1.26: Converges to $\frac{\pi}{2}$.

12.1.28: Converges to 1.

12.1.30: Diverges.

12.1.32: Converges to 0.

12.1.34: Diverges.

12.2.12: Diverges.

12.2.14: Converges to $\frac{5}{3}$.

12.2.18: Converges to $2 + \sqrt{2}$.

12.2.20: Converges to $\frac{3e}{3-e}$.

12.2.22: Diverges.

12.2.24: Diverges.

12.2.26: Converges to $\frac{5}{6}$.

12.2.28: Converges to $\frac{32}{7}$.

12.2.30: Diverges.

12.2.32: Converges to $\frac{\cos 1}{1-\cos 1}$.

12.2.34: Diverges.

12.2.42: The series converges for $3 < x < 5$. The sum is then $\frac{x-4}{5-x}$.

12.3.4: Diverges.

12.3.6: Converges to $\frac{1}{e-1}$.

12.4.6: Diverges.

12.4.8: Diverges.

12.4.10: Converges.

12.4.12: Converges.

12.4.14: Diverges.

12.4.16: Converges.

12.4.18: Diverges.

12.4.20: Converges.

12.4.22: Converges.

12.4.24: Diverges.

12.4.26: Converges.

12.4.28: Converges.

12.5.14: Converges.

12.5.16: Converges.

12.5.18: Diverges.

12.6.4: Divergent.

12.6.6: Absolutely convergent.

12.6.8: Conditionally convergent.

12.6.10: Divergent.

12.6.12: Absolutely convergent.

12.6.14: Absolutely convergent.

12.6.16: Divergent.

12.6.18: Absolutely convergent.

12.7.12: Converges.

12.7.24: Converges.

12.7.26: Converges.

12.7.28: Converges.

12.7.30: Converges.

12.7.32: Converges.

12.7.34: Diverges.