MATH 122: Calculus II

Some Hints and Answers for Assignment 25

I: Section 8.4 25, 29, 33

Exercise 25: By Ratio Test, the series converges. Example 2, Page 736 may be helpful.

Exercise 29: Ratio of successive terms approaches 1/2.

Exercise 33: Use Ratio Test and l'Hôpital's Rule. Ratio approaches $\frac{1}{1.01} < 1$

II: Section 8.5: 16, 21, 26

Exercise 16: This example should look familiar.

Exercise 21: $a_n = (-1)^n\, n\, \sin(1/n)$ fails the nth term test. You will need to use l'Hôpital's Rule.

Exercise 26: Use Root Test; series diverges.

III: Section 8.6: 1,7, 13

Exercise 1: The interval of convergence for the power series$\sum \frac{1}{n+4}$ is $[-1, 1)$.

Exercise 7: The interval of convergence is [-1,1).

Exercise 13: The series $\sum \frac{100^n}{n!\, x^n}$ converges only at $x = 0$.