

Chapter 11 (Part I) - Infinite Series

Each assignment has a total possible of **10 points**. For each section, self-grade for completion. (You may use ½ points.) I trust that you will give an honest evaluation of your own work. Your signature at the bottom indicates that this is an honest, accurate assessment of your work. Grades will be verified, as explained in class. Try additional problems for extra practice. Each assignment lists “Priority Problems” with a “PP” designation. Full credit awarded for completion of full assignment.
Assignments are subject to change. Any changes will be announced in class.

_____ 11.1: p. 684 #2 – 15, 17 – 45 odd, 55, 59 – 65 odd

Hint: Recall limit techniques reviewed with L’Hôpital’s Rule (e.g., limits with logarithms).
 PP: 9 – 15, 17 – 45 odd

★ Always state all series test(s) used. Write “Converges” or “Diverges” for answers, not just letters. ★

_____ 11.2: p. 694 #1 – 39 odd (skip 21), 38

For 3, 5, 7 think about it then refer to answer in back of book., Hint #11: Factor out 3 then find general term
 PP: 9, 11, 13, 17, 23, 25, 29, 31, 33, 35, 37, 38

_____ 11.3: p. 703 #3 – 26 but skip 20 and 24

Hint: May need Partial Fractions or Integration by Parts
 Hint: #26 use u -substitution $u = x^2$.
 PP: 3 – 25 odd

Quiz 11.1 – 11.3
Optional checkpoint and/or review.
Does not need to be included with HW.

_____ 11.4: p. 709 #1, 3*, 5*, 7* (*Use both comparison tests), 9 – 27 odd, 31, 37

Reminder: Always state all test(s) used.
 Hints: #19 limit compare to $\sum 4^n/3^n$, #27 limit compare to $\sum e^{-n}$
 PP: 1, 5*, 7*, 9, 13, 15, 17, 21, 25

_____ 11.5: p. 713 #1 – 19 odd. For each convergent series determine whether conditional or absolute.

Hints: #9 and #11 show $f'(x) < 0$ to show b_n is decreasing. #15 Note that $\cos n\pi = (-1)^n$
 Optional: Error Estimate Exercises #21 – 29 odd
 PP: 1 – 19 odd with conditional/absolute analysis

_____ 11.6: p. 719 #1 – 33 odd, 20, 22

Hint: Not every problem needs Ratio or Root Test.
 PP: 1, 5, 9, 13, 17, 20, 21, 22, 25, 33

_____ 11.7: p. 722 #1 – 37 odd (skip 29). Try some even ones for more practice.

Hints: #19 use $f'(x) < 0$ for $b_{n+1} \leq b_n$
 #27 direct compare to $\sum (\ln k)/k^2$ after showing what it does w/ Integral Test
 #31 multiply by $(1/4^k) / (1/4^k)$ first
 #33 limit compare to $\sum 1/(n\sqrt{n})$
 #35 Root test then need logarithms to find the limit
 PP: As needed for review.

Quiz 11.1 – 11.7
Optional checkpoint and/or review.
Does not need to be included with HW.

_____ **Total (70 Points)**

Signature: _____ Date: _____

Verified By: _____

Chapter 11 (Part II) - Infinite Series

Each assignment has a total possible of **10 points**. For each section, self-grade for completion. (You may use ½ points.) I trust that you will give an honest evaluation of your own work. Your signature at the bottom indicates that this is an honest, accurate assessment of your work. Grades will be verified, as explained in class. Try additional problems for extra practice. Each assignment lists “Priority Problems” with a “PP” designation. Full credit awarded for completion of full assignment. *Assignments are subject to change. Any changes will be announced in class.*

_____ 11.8: p. 727 #3 – 27 every other odd, 8. Try more odds for practice.

Hint: Use Root Test for some exercises.

PP: 3 – 27 e.o.o., 8

_____ 11.9: p. 733 #3, 4, 5, 7, 11, 13, 14, 15, 17, 27 (See Alternate Answers on web site.)

Note: Replace #13 with the following. If you get stuck on this one, try others first.

13) a) Find a power series (and radius of convergence) for $f(x) = \frac{1}{(1+x)^2}$ (Integrate first)

b) Find a power series for $f(x) = \frac{1}{(1+x)^3}$

Note: You will need to integrate twice, then differentiate twice.

c) Find a power series for $f(x) = \frac{x^2}{(1+x)^3}$ by multiplying your answer to (b) by x^2 .

Hints: #14c, just replace x with x^2 within your answer to 14a.

#27 find a power series for the integrand and use it to write out a polynomial with terms $n = 0, n = 1, n = 2$ as an approximation and integrate that.

PP: 5, 7, 13, 14, 15, 17

_____ 11.11: p. 755 #1 – 9 odd, 2, 13a – 21a only part (a), 23

Try graphing with calculator or *Mathematica* and use back of book to help understand.

PP: 3, 9, 15a, 16a, 18a, 19a, 21a

_____ 11.10: p. 746 #5 – 19 odd (Skip 11), 29 – 37 odd* (Skip 35), 63 – 68*

Do your best to create general series expression, otherwise write 4 or 5 terms until you see a pattern.

*Match with series on p. 743. You do not need to memorize those formulas.

PP: 5, 7, 9, 15, 17, 33, 65

_____ **Total (40 Points)**

Signature: _____ Date: _____

Verified By: _____