

Logistical Information

- 1:30 pm - 3:30 pm Thurs Dec 21, in MHC 205
- Most problems will be similar to problems on homework and previous exams.
- No calculators, notes, books, cell phones permitted.
- Bring whatever you need to help yourself concentrate for 2 hrs: watch, water bottle, granola bar . . .

The final exam is cumulative.

- Consult your review sheets for Exams 1, 2, and 3 for lists of basic facts and formulas to know, topics to know, and review problems for Units 1, 2, and 3.
- Also use the problems from Exams 1, 2, and 3 for practice.

Basic Facts and Formulas To Know from Unit 4:

- Sum of finite geometric series $a + ax + \cdots + ax^n$, sum of infinite geometric series $a + ax + ax^2 + \cdots$
- Harmonic series: what it is and that it diverges.
- Convergence/divergence of series of the form $\sum 1/n^p$ (p -series).
- Theorem 2, Integral Test, Ratio Test

Topics from Unit 4: Series, Power Series, Applications of Series

- Geometric Series: partial sum formula, convergence/divergence, sum of convergent geometric series, applications involving geometric series (9.2)
- Series: difference between a series and a sequence, difference between the convergence of a series and the convergence of the sequence of its terms, the sum of the series as the limit of partial sums (9.3)
- Tests for Convergence/Divergence: Theorem 9.2, Integral Test, Ratio Test (9.3, 9.4)
- Power Series: ratio test, radius of convergence (9.4, 9.5)
- Taylor Series: finding Taylor series using derivatives, finding Taylor series by substitution or multiplication, using Taylor series in applications (10.2, 10.3)

Additional Practice Problems for Unit 4:

Ch 9 Rev: 1-14, 21-23, 36-38, 40-43, 45, 47, 49, 52, 53, 56, 58-65, 72, 73, 75, 80, 95, 97

Ch 10 Rev: 1-4, 6, 7, 11-18, 23-27, 30, 33, 36, 37, 38, 44, 45, 47, 49