

MATH 153

Today

1. WeBWorK/Questions
2. Review for exam

Goals:

1. Prepare for the upcoming exam (Understand the topics, content, and techniques of the first half of Sequences and Series)

Where is today's material used?

1. Series appear frequently in chemistry and physics as a means of approximating functions.

Exam Review

1. Sequences
 - (a) Definition
 - (b) Finding common patterns
 - (c) Notation and terminology
 - (d) Convergence and divergence/Limits
 - (e) Increasing/decreasing/monotonic
 - (f) Boundedness
 - (g) Monotonic Sequence Theorem
2. Series
 - (a) Definition and difference from sequences
 - (b) Partial sums and the sequence of partial sums
 - (c) Convergence/divergence

- (d) Absolute and conditional convergence
- (e) Geometric series and their sums, alternating series, telescoping series
- (f) Tests [Know hypotheses]
 - i. Test for Divergence (if the terms don't go to 0, the series diverges)
 - ii. Integral Test
 - iii. Comparison Test
 - iv. p -series
 - v. Limit Comparison Test
 - vi. Alternating Series Test
 - vii. Ratio Test
 - viii. Root Test

Next Time

1. Exam!
2. **Turn in** 8.4 WeBWorK 10: 4, 11, 12