READING ASSIGNMENT 12

§11.1 (Sequences), §11.2 (Series)

NAME: SOLUTIONS

Due 23 July 2018

LEARNING OBJECTIVES

By the end of this lesson, you will be able to:

- explain the difference between a sequence and a series,
- determine convergence or divergence of sequences, perhaps using facts about their boundedness and monotonicity,
- state conditions under which a geometric series converges, and determine what a geometric series converges to,
- use the n-th term divergence test to determine if a series diverges.

REVIEW

- Review limits, limit laws, the squeeze theorem, and sigma notation.

READING

- Read section 11.1 (but skip example 3)
- Read section 11.2

QUESTIONS

(1) True or false?

(a) Every divergent sequence is unbounded. ANSWER: False.

(b) Every unbounded sequence diverges. ANSWER: True.

(c) If the series $\sum_{i=0}^{\infty} a_i$ converges, then $\lim_{i\to\infty} a_i = 0$. ANSWER: True.

(d) If $\lim_{i\to\infty} a_i = 0$, then the series $\sum_{i=0}^{\infty} a_i$ converges. ANSWER: False.

(e) If $\sum_{n=0}^{\infty} a_n$ diverges, then $\lim_{n\to\infty} a_n = \infty$. ANSWER: False.