

MATH 311
Advanced Calculus
Summer 2009

Homework Assignment #3

Due Monday, July 13

Follow the homework guidelines distributed in class in the preparation of the assignment.

Section 13: 6, 7(a)(b)(c)(d), 10, 15

Section 14: 8 (b)

Section 16: 6(c)(d)(e)

Additional problem: Determine whether each of the following sets is compact. Justify your answer.

- (1) $[1, 3)$
- (2) \mathbb{N}
- (3) $\{1 + \frac{(-1)^n}{n} : n \in \mathbb{N}\}$
- (4) $\{x \in \mathbb{R} : 1 \leq x^2 \leq 4\}$
- (5) $[1, \infty)$
- (6) $\{\sin(n\frac{\pi}{2}) : n \in \mathbb{N}\}$