

# Homework for Sections 5.1–5.3

Mathematics 360

due Wednesday, November 27

Read *Elementary Classical Analysis*, Sections 5.1–5.3, and the proofs on pp. 294–297.

1. Exercises 2 and 3, pg. 244 of *ECA*.
2. Exercise 4, pg. 247 of *ECA*.
3. Exercise 2, pg. 253 of *ECA*.

Hint for proving pointwise convergence for  $0 < x < 1$ : show by induction that if  $y > 0$ , then for any  $n \in \mathbb{N}$ ,

$$(1 + y)^n > 1 + ny + \frac{n(n-1)}{2}y^2$$

Then choose  $y$  so that  $x^3 = 1/(1 + y)$ .

4. Exercises 2bcd, 4, 8, 18, 20, 33, and 34, pp. 316–320 of *ECA*