MATH 361 — HOMEWORK 2.

due on Friday, September 18.

Textbook: *"Elementary Classical Analysis"* , second edition
by J. E. Marsden and M. J. Hoffman

Topics:

- **Review of Math 360**
- **5. Uniform Convergence**
  - 5.1 Pointwise and Uniform Convergence
  - 5.2 The Weierstrass M Test
  - 5.5 The Space of Continuous Functions
  - 5.6 The Arzela-Ascoli Theorem

Second Homework Assignment.

Reading:

- Read section 5.6 of Chapter 5., paying close attention to the examples. Read your notes.

Exercises:

Problem 1. Consider the family of functions $\mathcal{F} \subset C([0,1],\mathbb{R})$, $\mathcal{F} = \{f_\alpha \mid f_\alpha(x) = x^\alpha, \alpha > 0\}$.

Prove that $\mathcal{F}$ is not equicontinuous at $x = 1$.
Prove that $\mathcal{F}$ is not equicontinuous at $x = 0$.
Prove that $\mathcal{F}$ is equicontinuous on $A = (0,1)$.

***Problems*:**

- Page 316: problems $10, 24, 40, 45, 47, 69$.