Assignment #9 (revised)

Due Wednesday, 6 November 2019, at the start of class

The Exercises are from Chapter 16.

One exercise below is identified with your initials. Please LaTeX this problem and send both the `.tex` and `.pdf` to me at `elbueler@alaska.edu` by the same due date as above. See the course website for a LaTeX template.

DO THE FOLLOWING EXERCISES from the textbook:[1]

CHAPTER 16

- Exercise #1 on page 268.
- Exercise A. (*Exercise #1 is about simple functions. For this Exercise use the step function definition given in Prof. Maxwell's notes on Riemann integration.*) Show that there exists $f \in B[0,1]$ such that if ϕ_n are *step* functions on $[0,1]$ then (ϕ_n) does not converge uniformly to f.
- Exercise #3 on page 271. $\longleftarrow$ **WV**
- Exercise #5 on page 271. (*Of course, assume $r \in \mathbb{R}$ and $E \subset \mathbb{R}$. State a proposition and prove it.*)
- Exercise #6 on page 271. $\longleftarrow$ **DD**
- Exercise #8 on page 271. $\longleftarrow$ **AM**
- Exercise #9 on page 271. (*Hint. See the proof of Proposition 16.1.*)
- Exercise #16 on page 271.

[1] Carothers, *Real Analysis*, Cambridge University Press 2000.