

# Assignment #1

**Due Wednesday, 4 September 2019, at the start of class**

Make sure you have a copy of the textbook:

Carothers, *Real Analysis*, Cambridge University Press 2000.

Please read Chapters 1 and 2. This is material you should have seen in undergraduate real analysis, but this Assignment concerns Chapter 1. We will treat Chapter 2 lightly for now, but return to it as needed. The course really starts with Chapter 3 and Assignment #2.

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, i.e. at the start of class Wednesday 4 September. See the course website for a  $\LaTeX$  template.

DO THE FOLLOWING EXERCISES from the textbook:

- Exercise #4 on page 4.
- Exercise #6 on page 5.       $\leftarrow$  **AM**
- Exercise #8 on page 5.       $\leftarrow$  **WV**
- Exercise #11 on page 7.

(This is an efficient way to compute the square root of a number if an estimate is available. It is the Newton iteration for solving  $x^2 = a$ .)

- Exercise #14 on page 7.       $\leftarrow$  **DD**
- Exercise #18, parts (a),(b) only, on page 10.
- Exercise #20 on page 10.