

MATH 409 – HOMEWORK 3

Readings: Sections 4, 5, 7, and 8. This time in Section 4, focus on the Archimedean Property and on \mathbb{Q} is dense in \mathbb{R} . Section 7 is verbose, but the only thing you'll need to know is the definition of the limit (7.1) and that limits are unique (last paragraph of the section). Section 8 is **extremely** important and you should really understand *all* the examples in that section.

- **Section 4:** 16 (use denseness)
- **Section 5:** Nothing
- **Section 7:** 4
- **Section 8:** 1(b)(d), 2(c), 4, 5, 7(c), 8(a), 9(a), 10, AP

Additional Problem:

- Show that if s_n converges to s , then $|s_n|$ converges to $|s|$
- Is the converse true?

Date: Due: Friday, September 17, 2021.