

ASSIGNMENT 1

Please turn in your homework at the beginning of lecture. Please remember to remove any spiral notebook scritchies and to staple multiple pages together before coming to class. (The Mathematics Department office, King 205, has both a stapler and a paper cutter available for student use.)

DUE MONDAY, SEPTEMBER 8

Reading. Sections 3.1 and 3.2 of Herstein.

Herstein problems. Section 3.2, problems 5 (note: when n is an integer and a is a ring element, na is the sum of n copies of a), 6, 7, and 9.

An additional problem. Let $R = \{a + b\sqrt{2} : a, b \in \mathbb{Q}\}$. Prove that R is a field. (Hint: clearly $R \subseteq \mathbb{R}$, which makes verifying many of the axioms easy. What still needs to be checked?)