Math 361 Quiz topics Wednesday, Week 1

To prepare this Wednesday's quiz, please look at Wednesday's lecture notes. These notes are aspirational. I would like for you to understand all of the material presented there *eventually*. For the first reading, get as much as you can, and try not to feel overwhelmed. Do skim all of the material, though.

Today's (closed-book) quiz will cover a subset of the following:

Let R be a ring.

- What does it mean to say $p \in R$ is *prime*?
- What does it mean to say $p \in R$ is a *unit*?
- What does it mean to say $p \in R$ is a *irreducible*?
- What does it mean to say that R is an *integral domain*.
- Let R be a integral domain, and let $a, b, c \in R$. Suppose that $a \neq 0$ and $ab = ac$. Prove that $b = c$. (Warning: since R is not a field, we can't assume that a has a multiplicative inverse. Also, where do we use the fact that R is a integral domain?)