Math 308
2-3-1994

Problem Set 3.

Problem Set 2 is due on Monday, February 14.

As an informal part of this assignment, you should learn to run *Mathematica* on whatever computer you will be using it on (if you haven't done so already). If you have not used *Mathematica* before, I strongly suggest that you obtain the tutorial `introtom.ps` on `ftp.cwru.edu` in the directory `/math/mma`. It is a PostScript file, which you can view using Ghostscript (and Ghostview, if you're using Windows) or print on one of the network laser printers.

You should be prepared to do work with *Mathematica* beginning with Problem Set 4. Some of the problems will be too complicated to do by hand!

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- For Problem 7, you may refer to Problem 12.
- In Problem 10, you won't receive any credit unless you justify your answers. If it's irreducible, prove it; if it's reducible, factor it.

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- In Problems 11 and 20, try to make use of an appropriate norm map N defined like the map in Example 7. You should verify that your map is multiplicative if you make use of this property.
- In Problem 30, you need to show that a nonzero element has a multiplicative inverse. Let R be the domain, and let $r \in R$, $r \neq 0$. Look at the principal ideals

$$\langle r \rangle \supset \langle r^2 \rangle \supset \langle r^3 \rangle \supset \cdots.$$

"Genius is the ability to put into effect what is in your mind." - F. Scott Fitzgerald