Math 110 Quiz # 2 Review of coolness!

November 19, 2009

Hi everyone! Here's some information about the upcoming quiz. You should know that the quiz itself will ONLY cover the sections below–it will not be cumulative to the beginning of the course. The final exam, however, WILL be cumulative to the beginning of the course. I've listed some homework problems below to assist you in finding highly directed problems to work on. Please bear in mind, though, that ***just because I list problems doesn't mean that I'll ask about them, and don't assume that the ONLY problems I list would be the kinds of problems I'd ask about.*** *The entire list of homework problems for these sections is a complete study guide of problems to practice. Good luck, and be sure to let me know if you need any help!*

1. Section 4.2: Properties of Division. Contrary to the title, this section is really about how to divide one polynomial into another. The *division algorithm* is what tells us that this is possible. The factor theorem and the remainder theorem were of extreme interest, as they helped us understand the connection between polynomials, their factors, and their roots. I would know how to divide one polynomial into another, and to be able to use the remainder theorem (problems 9–12) and the factor theorem (problems 13–16) to identify factors and roots when long division might not be feasible.

2. Section 4.3: Zeros of Polynomials. This is a continuation of the last section, and it asks questions about zeros of polynomials. We decided that a polynomial could have no more roots than its degree, and we understood what multiplicity of a root is. All of the homework problems are great practice–they each ask something different (in whatever group they appear in). A discussion of complex roots is also of interest here, and it may be the case that Corey would ask you something about *all* of the roots of a polynomial, even if not all of these roots are real (i.e., complex).

3. Section 4.5: Rational Functions. Here we learned about what rational functions are, and what asymptotes are–both horizontal and vertical. The other sort of weird behavior that rational functions exhibit that other functions don't necessarily do is the notion of a hole. Knowing how to find all asymptotes and holes (as outlined in class) will be of great use to you, as in numbers 3 and 4. Numbers 45–48 are great in that they ask you to understand the reverse process.