SOME TOPICS TO KNOW FOR THE FIRST MIDTERM

- The Fundamental Theorem of Arithmetic
- Greatest common divisor, least common multiple
- Congruences
- Fermat's Little Theorem, Euler's generalization
- The Sun Ze Theorem
- Fast modular exponentiation (see the beginning of the Large Prime Numbers handout)
- The pigeonhole principle
- The finite geometric sum and its variants

The quiz will give you four pairs of questions, with you to choose one from each pair, i.e., do A1 or A2, B1 or B2, C1 or C2, and D1 or D2. You will have a week to work on the quiz. So you are encouraged to spread the work over the week. For example, you could glance over the problems immediately, then a day or so later choose your A and B problems and get started on them, then the next day finish them up and polish them up, and then repeat the process with the C and D problems. Or something like that.