

Math 312, Section 102
Review for Midterm on October 23, 2001

SECTIONS COVERED ON THE MIDTERM:

- 1 The integers.** §1.1 Numbers, sequences, and sums; §1.2 Mathematical induction; §1.3 The Fibonacci numbers; §1.4 Divisibility.
- 2 Integer Representations and Operations.** §2.1 Representations of integers.
- 3 Primes and Greatest Common Divisors.** §3.1 Prime numbers; §3.2 Greatest common divisors; §3.3 The Euclidean algorithm; §3.4 The fundamental theorem of arithmetic; §3.6 Linear Diophantine equations.
- 4 Congruences.** §4.1 Introduction to congruences; §4.2 Linear congruences; §4.3 The Chinese Remainder Theorem.
- 5 Applications of Congruences.** §5.1 Divisibility tests.

SUGGESTED REVIEW PROBLEMS (do not hand in)

- Rosen, Section 1.2, p. 22, #9
- Rosen, Section 1.3, p. 28, #5 (the *second* #5!)
- Rosen, Section 1.4, p. 35, #15
- Rosen, Section 2.1, p. 45, #17
- Rosen, Section 3.1, p. 77, #11
- Rosen, Section 3.2, p. 84, #9
- Rosen, Section 3.3, p. 93, #1
- Rosen, Section 3.3, p. 94, #3
- Rosen, Section 3.4, p. 104, #10
- Rosen, Section 3.6, p. 123, #3
- Rosen, Section 4.1, p. 136, #23
- Rosen, Section 4.1, p. 138, #33
- Rosen, Section 4.2, p. 141, #1
- Rosen, Section 4.2, p. 142, #5 and #12
- Rosen, Section 4.3, p. 149, #7
- Rosen, Section 4.3, p. 152, #33
- Rosen, Section 5.1, p. 177, #3, #5, #7, #9, and #10
- Rosen, Section 5.1, p. 178, #23