Prepare for the exam by carefully studying this list with reference to your notes, in-class activities, quizzes, and homework assignments. Strive to master the concepts, explanations, and computational techniques for use in general; trying just to memorize the specific problems we’ve practiced is unlikely to be reliable or successful on the exam.

**Meaning of Fractions:**

1. Remember to create legitimate, K-6-level fractions as answers to related questions.
2. Spell the terms for top, bottom of a fraction. Know what unit, proper, improper fractions are.
3. State what numerator, denominator represent in the part-of-a-whole (area) model for fractions.
4. Determine the fraction represented by a given diagram, including ones like #6 on p. 358.
5. Draw a figure representing a given fraction, as in #5 on p. 359 or #6 on HW #1.
6. Define “equivalent fractions”; find equivalent fractions, including problems like #14 on p. 358.
7. Demonstrate, recognize the FLF in creating equal fractions, in reducing to lowest terms.
8. Put a set of fractions in order (ties are allowed) using your choice of techniques on Summary #1.
9. Be able to apply different techniques for ordering fractions, choose the most effective.
10. State what “denseness” means; demonstrate it using at least two techniques.

**Fraction Arithmetic:**

1. Add, subtract, multiply, and divide fractions using ordinary classroom algorithms.
2. Solve word problems requiring fraction arithmetic.
3. Draw pictures to add/subtract without pre-determining a CD; state how the numerator and denominator of the answer are shown.
4. Convert between mixed number and improper fraction notation, with and without the shortcut.
5. Add, subtract entirely in mixed numbers. Use the Distributive Property to multiply.
6. Use paper-folding or diagrams to multiply fractions, including improper ones; state how numerator, denominator result.
7. Demonstrate complete “pre-cancelling” in multiplying or dividing a set of fractions.
8. Use pictures to perform fraction division, including problems that have a “leftover portion.” Explain your work and answer.
9. Estimate answers to fractions or mixed number computations, as in text homework. Tell whether your response is high or low.

**Essay Topics:**

1. I grade mathematical correctness, verbal clarity, AND conceptual thoroughness of your response.
2. Know which part of a fraction cannot be zero; explain why without referring to division.
3. Precisely state the FLF; explain why it is true without referring to multiplication by 1.
4. Explain why a common denominator (CD) is required for adding/subtracting.
5. Explain why “invert and multiply” works for a specific division problem.
6. Correct false statements about fractions, like #7, 23 in 6-1C, #1, 5, 6 in 6-2C, #1, 2, 8, 9 in 6-3C.

**Bring a non-cell phone calculator for the exam.**