

Math 211, FINAL EXAM Review

THE FINAL TIME FOR ALL SECTIONS IS 8 – 9:50 a.m.

LOCATION MNB 130

- You may bring one 3" x 5" note card with notes on both sides to the exam.
- You may not use a calculator on Part One of the exam.
- You may use a calculator on Part Two of the exam.
- The Final Exam is a mix of true-false, multiple choice and short answer questions
- You may use your personal manipulative kit during the exam
- You may not use a cell phone or any other electronic device during the exam.

CONCEPTS TO KNOW

- Problem Solving: Know what the Polya Four Steps are and how to use them
- Problem Solving: Recognizing and extending patterns.
- Set sorting and set operations (element, subset, intersection, union)
- Properties of addition, subtraction, multiplication and division of whole numbers, integers and subsets of whole numbers and integers—closure, associative, commutative, identity
- Arithmetic Sequences, Geometric Sequences, the method of Finite Differences
- Base modeling, understanding digits, place values and numerals
- Graphing and finding equations of lines, including finding equations of lines given any two points on the line, parallel and perpendicular lines, simplifying algebraic expressions, equalities and inequalities
- Basic logic, distinguishing between valid and invalid arguments using Venn Diagrams, re-writing conditional phrases using converse, inverse and contrapositive.
- Adding, subtracting and multiplying in various bases with base pieces
- Converting base 10 numbers to other bases (such as base 5)
- The 3 subtraction settings: Comparison, Take Away and the Missing Addend—how to recognize them and work with them
- Base piece models for multiplication, Partial Products for multiplication and how they relate to the base 10 multiplication model and the standard multiplication algorithm
- The three division models: Sharing, Measurement and Array—how to recognize them and work with them
- The concepts of factor, divisibility and multiple and how to write this symbolically (i.e. $a | b$).
- Prime factorization and how it relates to the number of overall factors in a number
- The concept of Least Common Multiple, what it means, how to compute it, how to apply it and its relationship to GCF
- The concept of Greatest Common Factor, what it means, how to compute it, how to apply it and its relationship to LCM
- Divisibility tests for 2, 3, 4, 5, 6, 9, 10 and 11, what they are and how to apply them

- Black and Red tile models for integer addition, subtraction, multiplication and division; how to use them, what they mean

REVIEW SUGGESTIONS

- Practice Problems: Chapter Five Test, page 336
1 – 3, however, this is not enough practice, refer to class handouts, homework problems, activity set activities and homework and make up your own examples and see the list above
- Practice by redoing all of the problems that correspond to the list above from EXAMS One & Two. Don't just read over them, actually redo them.
- Practice all of the no calculator problems on the Skills Practice handout (week 9)
- Practice all of the Math 211 Final Exam Review Problems linked to your class webpage Find more problems from the text, class or homework that “match” the problems you find listed above. If you find a topic you are unsure of, find several problems and PRACTICE until you are comfortable with them; just reading over problems is not practice—you have to write them out without looking at the solutions.