MATH 306
EXAM I REVIEW

The Basics
The exam will be Thursday 8 February. It will cover chapters 1,2 and 3 from your text. You will have the entire class period (1.5 hours) to write the exam (though I will write a one-hour exam). It will be closed book, but I will provide all necessary "numerical keys." (That is, what specific symbols mean. See the symbols on pages 7,13,15,16.) Most questions (about 80%) will be mathematical (similar to homework and quiz problems). But some questions will be historical, similar to reading quizzes. I may put some short answer or perhaps a short essay question. (EXAMPLE: Compare and contrast the mathematical development of the ancient Egyptians and the Babylonians. How was their development similar? How was it different?)

FYI: The Schedule for the next two weeks
Today (Thursday 1 February): You turn in homework 3. We finish Chapter 3. Homework 4 is assigned.
Tuesday 6 February: I hand back graded homework 3. At the beginning of class you ask questions about homework 4 or about the exam. We will begin talking about Chapter 4 (Euclid's *Elements*.) Homework 4 is due today at 5:00pm. I will post solutions at 5 and grade the papers Tuesday night. You can pick up your graded homework on Wednesday.
Thursday 8 February: You take Exam I. Your next reading and homework assignment is assigned. You will have a reading quiz next **Tuesday** (2/13) and homework due next **Thursday** (2/15) all in Chapter 4.

Actual Review:
Chapter 1
numerical representation of Egyptians, Mayans, Greeks, Babylonians
Chapter 2
Egyptian arithmetic, Egyptian fractions including Fibonacci's algorithm for writing a rational as a sum of unit fractions, Egyptian geometry especially area of a circle and volume of a truncated pyramid;
Babylonian arithmetic including fractions as reciprocals, quadratic equation including "pictures" of (what we think of as) algebraic identities. Pythagorean triples
Chapter 3
Emphasized topics: figurative numbers, Zeno's paradox, geometric proof of the Pythagorean Theorem, incommensurable quantities (read the proof that $\sqrt{2}$ is irrational), the three construction problems of antiquity, the quadratix.
Omitted topics: lunes, Theon's diagonals