MAT 300 -02 REVIEW SHEET #1
Spring 2008

I will draw the questions for the test from material outlined by the questions given below and from possible combinations of them. In general, you can use our numerals and number system in doing problems, unless the instructions specifically state otherwise. For questions that ask you to discuss something, you should be able to write several paragraphs on that topic. I reserve the right to give take-home questions other than the ones listed here, although at this time I am unlikely to give any take-home component to this test.

1. Be able to write and translate numbers using the Egyptian hieroglyphic notation, including fractions. I will give you the hieroglyphic symbols.
2. Be able to write and translate numbers, including fractions, into both our sexagesimal notation and the Babylonian cuneiform notation.
3. Be able to describe and discuss the Babylonian numeration system, including its strengths and weaknesses
4. Given the table of Greek numerals, be able to write and translate numbers written in Greek notation.
5. Given a table of Roman numerals, be able to write and translate numbers written in Roman notation.
6. Be able to multiply and divide numbers, including fractions, using the Egyptian methods. Be able to describe the key features or steps in the respective processes.
7. Be able to solve first order linear equations using the Egyptian method of false position
8. Be able to add and subtract sexagesimal numbers.
9. Given appropriate tables, be able to multiply sexagesimal numbers using the distributive property.
10. Be able to divide by a sexagesimal number by multiplying by its reciprocal.
11. Be able to find the square roots of numbers using the methods that were discussed in class as being used by the Babylonians.
12. Be able to translate into a corresponding problem in our notation Babylonian problems phrased in terms of "a square and its side or a number of its sides" or "the side and area of a rectangle," and similar expressions.
13. Be able to solve a system of the form $xy = c$, $x + y = b$, using the method of the Babylonians.
14. Be able to solve a quadratic equation using the Babylonian procedures equivalent to the quadratic formula. Be able to draw and label the accompanying picture.
15. Be able to discuss the contents of Plimpton 322 and the implications for our understanding of the history of mathematics.
16. Be able to discuss our primary sources (records) for the mathematics of the Egyptians.
17. Be able to discuss (briefly) our primary sources (records) for the mathematics of the Babylonians during the period called Old Babylon (approximately 1800-1600 BCE),. In particular, note that the mathematics tablets fall into two main categories, table tablets and problem tablets, and be able to discuss the nature of each kind of tablet.

18. Be able to discuss the mathematical achievements of the ancient Egyptians, including the level of mathematical sophistication, some characteristic types of problems considered, and other pertinent facts. Be able to give specific examples where possible.
19. Be able to discuss the mathematical achievements of the Babylonians during the period called Old Babylon (approximately 1800-1600 BCE), including the level of mathematical sophistication, some characteristic types of problems considered, and other pertinent facts. Be able to give specific examples where possible.

THE END!