Ancient Mathematics, Assignment 1: Literature Search and Exercises.
Due Tuesday 14th Feb 2012.

Answer the following Questions. For each, give references for your answers. Information is contained in the books on reserve in the Cohen or can be found on the internet.

1) What mathematics, if anything, do you think is represented by the notches on the Ishango Bone? Is it more mathematical than the Le(m)bombo Bone? Give arguments for and against the statement that the bones provide evidence of mathematical ability in early members of Homo Sapiens.

2) What is the base for the Greenlandic number system, and how are 7, 13 and 19 represented?

3) What are the Egyptian symbols for 10^5 and 10^6? Work out the number of days since you were born. Express that number using Egyptian symbols.

4) In one Babylonian text the problem: ' a quarter width and a length is 7 hands; a length and a width is 10 hands' The answer is' 30 fingers and 20 fingers'. Explain the problem and its answer in modern notation.

5) Show that 496 is a perfect number.

6) What numbers are represented by σμη and 'εχλ in the Greek system of numerals? Express your answer to Q3 in the Greek system of numerals.

7) What are the major differences between the Greek system of numerals and the decimal system?

8) What is proposition 47 of Book I of Euclid's Elements better known as?

This assignment and the short exercises given out in lectures are worth, in total, a maximum of 5 marks.