Assignment 1

1. Write the Hindu-Arabic equivalent of each of the following.

a)  Answer: _____

b)  Answer: _____

c) **DCXCVIII** Answer: _____

d) **CMLXXIV** Answer: _____

e)  Answer: _____

f)  Answer: _____

g)  Answer: _____

h)  Answer: _____

2. Write the following in Egyptian notation.

a) 434 Answer: _____

b) 1348 Answer: _____

3. Write the following in Roman notation using the subtractive principle as appropriate.

a) 478 Answer: _____

b) 1944 Answer: _____

4. Write these in Babylonian notation.

   a) 251 Answer: _____

   b) 3643 Answer: _____

5. Write these in Mayan notation.

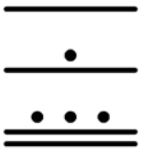
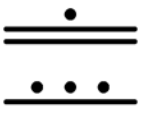
   a) 1304 b) 11,573

6. Add 

   and 

   using only Egyptian notation. Write your answer as simply as possible.

7. Add **MDCCXXIX** and **MCCCLXIV** using only Roman notation. Write your answer as simply as possible.

8. Add  and  using only Mayan notation.

9. Access the applet in http://ejad.best.vwh.net/java/b10blocks/b10blocks.html. Click on *instructions to use it,* then learn the function of each of the applet tools. Return to the applet and practice with each tool. [Example: Drag 10 units into the working area to form a vertical column, then use the glue tool to combine them into a long. Break the long into 10 units with the hammer. Lasso four of the ten units, and move them to the recycling bin.] When satisfied, click on the broom tool to clear all the blocks from the working area. Change to the place value [100, 10, 1] backdrop by clicking on it.

    a) Model the problem 347 + 86 by dragging 347 (3 flats, 4 longs, 7 units) and 86 (8 longs, 6 units) into the working area. Press the Print Screen key (prt scr), then paste the screen dump into a WORD file. Return to the working area of the applet. Use the glue tool to combine 10 of the longs into a flat, and then 10 of the units into a long. Move the new flat and long to their appropriate location. What is 347 + 86? Press the Print Screen key, and paste the second screen dump into the WORD file beneath the previous one. Use their handles to reduce the size of each graphic so they will fit on one page. Print the page and attach the printout to this assignment.

    b) Model the problem 453 – 87 by dragging 453 (4 flats, 5 longs, 3 units) into the working area. Use the hammer tool to break apart one of the flats into 10 longs, and then one of the longs into 10 units. Remove 87 by lassoing 8 longs and 7 units and moving them to the recycling bin. Move the residual blocks to their appropriate location. What is 453 – 87? Press the Print Screen key, then paste the screen dump into a WORD file. Print the page and attach the printout to this assignment.

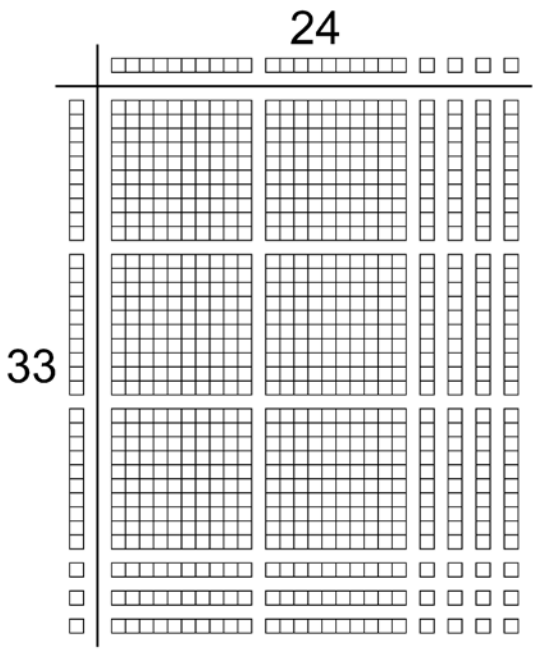
10. Sketch a solution (in three steps as on the handout) to 424 – 168 using a chip abacus.

11. Compute each of the following using the appropriate lattice method.

    a) 482 + 269

    b) 397 x 45

12. Consider the product 33 × 24. Count the number of units, vertical longs, horizontal longs, and flats representing this product in the rectangular array below. Then find the product using Intermediate Algorithm 1. Use color coding (four highlighting colors) to show the connection between the various pieces in the rectangular array, the number of each kind of piece, the numerical value of each kind of piece, and the four products in the algorithm. Present all information in the format used on the color handout.



13. Use the scaffold method for division to find 5697 ÷ 23. Show all work.

14. Find the quotient and remainder for 18114 ÷ 37 using a standard calculator and the method described on p 19. Show all work.