HW 1

1. How did you learn to count? Include school/home/play experiences as applicable.
2. What is a numeration system?
3. Explain the difference between a number and a numeral.
4. Give possible reasons for the following choices of bases: 2,5,8,10,12,16,20,60.
5. What are pros and cons of the following numeration systems: tallying, Hindu-Arabic, binary, scientific notation?
6. Describe what a positional numeration system is.
7. Write the following Hindu-Arabic numbers in expanded form: 15.3, 2097, 10
8. Write the following numbers in expanded form and convert to Hindu-Arabic numbers: 10011.01 (binary), 2102 (ternary), 17AF (hexadecimal).
9. Convert 275 (base 10) to the following bases: binary, quinary, octal.
10. In base 2, do the following: 101+1011, 1101-1011, 110×11, 111/11.
11. In base 7, do the following: 6244+135, 462-215, 3504×12.
12. In base 16, do the following: AE87+20FF, 3D8-19B, C5×3A.
13. Make a base 5 multiplication table.
14. In base 5, do the following: 143/4, 201/3.
15. Figure out how to change bases on your calculator. However, do not use your calculator to do the other problems automatically.
16. What are some bases that occur in our society? Give examples. Include some that are mixed.
17. What do you hope to learn from this class? Are there any particular topics/people you would like to learn about?