Chemistry I Name _____

Date _____ Per ____

Worksheet # C4 Scientific Notation

1. Convert the following to scientific notation (without your calculator):

a. _____ 12,001

b. _____ 0.00000345

c. _____ 456.21

d. _____ 3,100,000,000,000

e. _____ 0.00010203

f. _____ 39

2. Convert the following to non-scientific notation (still no calculator):

a. _____ 6.02×10^{5}

b. _____ 7.92×10^{-4}

c. _____ 2.13×10^{1}

d. _____ 9.8×10^{2}

e. _____ 5.9×10^{-3}

f. _____ 4.6×10^{-5}

3. Solve the following. Remember that if the number in front of the exponent gets bigger, the exponent must get smaller, and vice versa.

a. $6.021 \times 10^{5} = 602.1 \times 10^{y}$ y = _____

b. $.00045 \times 10^{9} = .45 \times 10^{z}$ z = _____

c. $70900 \times 10^{-4} = t \times 10^{2}$ t = _____

4. Compute the following multiplication problems, finally WITH a calculator. Keep all the calculations in the calculator - you shouldn't have to write down any numbers except the fi answer. Answer with the correct number of significant figures.

a. _____ $(6.02 \times 10^{5}) \times (9.8 \times 10^{2})$

b. _____ $(7.5 \times 10^{-3}) \times (2.13 \times 10^{6})$

c. _____ $(2.13 \times 10^{6}) \div (8.09 \times 10^{5})$

d. _____ $(6.45 \times 10^{-6}) \div (1.7 \times 10^{3})$

e. _____ $[(2.13 \times 10^{6}) \times (8.09 \times 10^{5})] \div (1.9 \times 10^{-14})$

f. _____ $\dfrac{3.4 \times (5.5 \times 10^{2}) \times (7.5 \times 10^{-3}) \times 8.99}{(3.5 \times 10^{-2}) \times (6.3 \times 10^{5})}$

5. _____ Are you comfortable using your calculator to do these problems?