Chem 1 Hour\_\_\_\_\_ Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Wexler/Steinhorst

Scientific Notation Practice 3: Computations with Scientific Notation

Date assigned:

Rules:

A. Addition and subtraction: You must first adjust the exponents of the numbers being combined so that they are the same (remember the rule “if one gets bigger, the other gets smaller”.

Example: (2.0 x 103) + **(3.0 x 102)** = (2.0 x 103) + **(0.30 x 103)** = 2.3 x 103

B. Multiplication: Use the “addition rule for exponents”

Example: (2.0 x 103) x (3.0 x 102) = 6.0 x 103+2 = 6.0 x 105

C. Division: Use the “subtraction rule for exponents”

Example: (12.0 x 105)/(3.0 x 102) = 4.0 x 105-2 = 4.0 x 103

Compute each of the following in scientific notation:

1. (3.0 x 106) + (2.5 x 106) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. (6.0 x 108) + (3.0 x 107) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. (2.05 x 105) + (5.0 x 103) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. (6.02 x 1023) (8.65 x 104) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. (6.02 x 1023) (9.63 x 10–2) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. (4.12 x 10–4) (7.33 x 1012) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. 5.6 x 10–18 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8.9 x 108

8. 1.0 x 10–14  = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4.2 x 10–6

9. 7.85 x 1026 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6.02 x 1023