Name: _____
Hour: ____ Date: _____

Chemistry: *Scientific Notation*

***Part A*: Express each of the following in standard form.**

1. 5.2×10^{3}
2. 9.65×10^{-4}
3. 8.5×10^{-2}
4. 2.71×10^{4}
5. 3.6×10^{1}
6. 6.452×10^{2}
7. 8.77×10^{-1}
8. 6.4×10^{-3}

***Part B*: Express each of the following in scientific notation.**

1. 78,000
2. 0.00053
3. 250
4. 2,687
5. 16
6. 0.0043
7. 0.875
8. 0.012654

***Part C*: Use the exponent function on your calculator (EE or EXP) to compute the following.**

1. $(6.02 \times 10^{23})(8.65 \times 10^{4})$
2. $(6.02 \times 10^{23})(9.63 \times 10^{-2})$
3. $\dfrac{5.6 \times 10^{-18}}{8.9 \times 10^{8}}$
4. $(-4.12 \times 10^{-4})(7.33 \times 10^{12})$
5. $\dfrac{1.0 \times 10^{-14}}{4.2 \times 10^{-6}}$
6. $\dfrac{7.85 \times 10^{26}}{6.02 \times 10^{23}}$
7. $(-3.2 \times 10^{-7})(-8.6 \times 10^{-9})$
8. $\dfrac{(5.4 \times 10^{4})(2.2 \times 10^{7})}{4.5 \times 10^{5}}$
9. $\dfrac{(6.02 \times 10^{23})(-1.42 \times 10^{-15})}{6.54 \times 10^{-6}}$
10. $\dfrac{(6.02 \times 10^{23})(-5.11 \times 10^{-27})}{-8.23 \times 10^{5}}$
11. $\dfrac{(3.1 \times 10^{14})(4.4 \times 10^{-12})}{-6.6 \times 10^{-14}}$
12. $\dfrac{(8.2 \times 10^{-3})(-7.9 \times 10^{7})}{7.3 \times 10^{-16}}$
13. $\dfrac{(-1.6 \times 10^{5})(-2.4 \times 10^{15})}{8.9 \times 10^{3}}$
14. $(7.0 \times 10^{28})(-3.2 \times 10^{-20})(-6.4 \times 10^{35})$

KEY

Chemistry: *Scientific Notation*

***Part A*: Express each of the following in standard form.**

1. 5.2×10^{3} **5200**
2. 9.65×10^{-4} **0.000965**
3. 8.5×10^{-2} **0.085**
4. 2.71×10^{4} **27,100**
5. 3.6×10^{1} **36**
6. 6.452×10^{2} **645.2**
7. 8.77×10^{-1} **0.877**
8. 6.4×10^{-3} **0.0064**

***Part B*: Express each of the following in scientific notation.**

1. 78,000 **7.8×10^{4}**
2. 0.00053 **5.3×10^{-4}**
3. 250 **2.5×10^{2}**
4. 2,687 **2.687×10^{3}**
5. 16 **1.6×10^{1}**
6. 0.0043 **4.3×10^{-3}**
7. 0.875 **8.75×10^{-1}**
8. 0.012654 **1.2654×10^{-2}**

***Part C*: Use the exponent function on your calculator (EE or EXP) to compute the following.**

1. $(6.02 \times 10^{23})(8.65 \times 10^{4})$ **5.21×10^{28}**
2. $(6.02 \times 10^{23})(9.63 \times 10^{-2})$ **5.80×10^{22}**
3. $\dfrac{5.6 \times 10^{-18}}{8.9 \times 10^{8}}$ **6.3×10^{-27}**
4. $(-4.12 \times 10^{-4})(7.33 \times 10^{12})$ **-3.02×10^{9}**
5. $\dfrac{1.0 \times 10^{-14}}{4.2 \times 10^{-6}}$ **2.4×10^{-9}**
6. $\dfrac{7.85 \times 10^{26}}{6.02 \times 10^{23}}$ **1.30×10^{3}**
7. $(-3.2 \times 10^{-7})(-8.6 \times 10^{-9})$ **2.8×10^{-15}**
8. $\dfrac{(5.4 \times 10^{4})(2.2 \times 10^{7})}{4.5 \times 10^{5}}$ **2.6×10^{6}**
9. $\dfrac{(6.02 \times 10^{23})(-1.42 \times 10^{-15})}{6.54 \times 10^{-6}}$ **-1.31×10^{14}**
10. $\dfrac{(6.02 \times 10^{23})(-5.11 \times 10^{-27})}{-8.23 \times 10^{5}}$ **3.74×10^{-9}**
11. $\dfrac{(3.1 \times 10^{14})(4.4 \times 10^{-12})}{-6.6 \times 10^{-14}}$ **-2.1×10^{16}**
12. $\dfrac{(8.2 \times 10^{-3})(-7.9 \times 10^{7})}{7.3 \times 10^{-16}}$ **-8.9×10^{20}**
13. $\dfrac{(-1.6 \times 10^{5})(-2.4 \times 10^{15})}{8.9 \times 10^{3}}$ **4.3×10^{16}**
14. $(7.0 \times 10^{28})(-3.2 \times 10^{-20})(-6.4 \times 10^{35})$ **$1.4x\ 10^{45}$**