**Scientific Notation** Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Part I. Standard Form to Scientific Notation**

**Directions: Write the following values in scientific notation.**

1. 15
2. 2,000 *(you don’t have to include the 0’s after the 2)*
3. 0.0000000175
4. 175,000,000,000,000,000 *(you don’t have to include the 0’s after the 5)*
5. 0.00010675

**Part II. Scientific Notation to Standard Form**

**Directions: Write the following values in standard form.**

1. 1.5 x 104
2. 2.8 x 10-5
3. 3.75 x 109
4. 6.022 x 10-12
5. 9.1101 x 1011
6. 1.43 x 10-2
7. 3.4887 x 108
8. 7.0001 x 102
9. 9.009 x 10-3
10. 4.1 x 10-20

**Part III. Questions**

**Directions: Answer the following questions.**

1. What types of values are usually written in scientific notation?
2. When going from standard form to scientific notation, the exponent is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when the decimal is moved to the **left**.
3. When going from standard form to scientific notation, the exponent is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when the decimal is moved to the **right**.
4. When going from scientific notation to standard form, the decimal is moved to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when the exponent is **positive**.
5. When going from scientific notation to standard form, the decimal is moved to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when the exponent is **negative**.

**Part IV. Mathematical Operations with Scientific Notation**

**Directions:** Complete the following operations and write your answers with the correct units.

1. (5.5 x 104 cm) x (1.4 x 104 cm) =
2. (2.77 x 10-5 m) x (3.29 x 10-4 m) =
3. (4.34 g) ÷ (8.22 x 106 mL) =
4. (3.8 x 10-2 cm) x (4.4 x 10-2 cm) x (7.5 x 10-2 cm) =
5. (3.0 x 104 L) ÷ (62 s) =
6. (6.05 x 107 g) ÷ (8.8 x 106 cm3) =
7. (5.2 x 108 cm3) ÷ (9.5 x 102 cm) =
8. (3.8 x 10-5 kg) ÷ (4.6 x 10-5 kg/cm3) =
9. (12.5 g) ÷ (6.25 mL) =
10. (3.244 m) ÷ (1.4 s) =