***SPH 3U1 Assignment # 1***

***Scientific Notation, Significant Digits and Conversions***

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Due Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Write each number in ***scientific notation***.

a. 8 000 000 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ f. 780 x 103 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b. 0.009012 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ g. 0.00809 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c. 6700 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ h. 8.27 x 105 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

d. 0.000 16 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ i. 560 000 x 10-4 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

e. 93450 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ j. 0.0058 x 1012 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Write each number in ***expanded form***.

a. 4.5 x 105 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ d. 4.6 x 10-4 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b. 7.86 x 103 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ e. 0.078 x 104 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c. 561 x 10-2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ f. 9.8 x 100 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. State the number of ***significant digits*** contained in each value.

a. 5600 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ g. 0.000 000 090 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b. 900 000 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ h. 15 000.0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c. 0.30010 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ i. 0.003 100 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

d. 0.005 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ j. 9.00700 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

e. 5000 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ k. 80 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

f. 3.800 x 103 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ l. 0.010 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. Perform the indicated ***metric conversion***.

a. 89 cm = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_m k. 6.70 cg =\_\_\_\_\_\_\_\_\_\_\_\_\_\_kg

b. 6780 km = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_m l. 5.6 x 104 cm = \_\_\_\_\_\_\_\_\_\_\_\_\_pm

c. 650 mm = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_m m. 7.2 x 10-2km = \_\_\_\_\_\_\_\_\_\_\_\_\_m

d. 364 cm = \_\_\_\_\_\_\_\_\_\_\_\_\_\_mm n. 5 x 105 fm = \_\_\_\_\_\_\_\_\_\_\_\_\_μm

e. 8.6 dm = \_\_\_\_\_\_\_\_\_\_\_\_\_\_mm o. 3.2 x 10-9 kg = \_\_\_\_\_\_\_\_\_\_\_\_\_mg

f. 0.09 km = \_\_\_\_\_\_\_\_\_\_\_\_\_\_cm p. 7 x 1015 pm = \_\_\_\_\_\_\_\_\_\_\_\_dam

g. 5.68 L = \_\_\_\_\_\_\_\_\_\_\_\_\_\_kL q. 9 x 10 Zm =\_\_\_\_\_\_\_\_\_\_\_\_\_Mm

h. 4600 dB = \_\_\_\_\_\_\_\_\_\_\_\_\_\_B r. 1.23 x 10-4Pm = \_\_\_\_\_\_\_\_\_\_\_\_\_Em

i. 0.891 kg =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_mg s. 5.6 x 105 μg =\_\_\_\_\_\_\_\_\_\_\_\_\_dg

j. 345000 μm =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_cm t. 7.98 x 107 mm =\_\_\_\_\_\_\_\_\_\_\_\_\_hm

5. Calculate the answer to the following calculations and round off to the correct number of decimal places or significant figures.

a. 5.671 + 18.67 - 12.45677

b. 12 x 18.79

 1.45

c. 3.452 ÷ 0.00012

d. 0.00012 - 0.00180 + 1.9000