Workshop #1 Significant figures & dimensional Analysis **Name:**

Section 1a: Round off the following numbers to 3 significant figures and use scientific notation.

a) 23456 _____ b) 0.000238605 _____

c) 0.09763400 _____ d) 7689994656 _____

1b. Round off the following numbers to **two** significant figures and write them in scientific notation:

a). 0.00765796 _____ c) 56928.31 _____

b) 423.56 _____ d) 0.000055220 _____

1c. Round off the following numbers to **four** significant figures and write them in scientific notation.

a) 0.00765796 _____ c) 56928.38 _____

b) 423.56 _____ d) 0.0000555226 _____

section 2:. Solve each of the following problems. Express each answer to the correct number of significant figures, in scientific notation and with proper units.

1. 382.5 mL + 96.31 mL - 5.9 mL = _____

2. $\dfrac{3.496\ \text{ft} + 27.22\ \text{ft}}{5.006\ \text{lb}}$ = _____

3. $\dfrac{(2.661 \times 10^{-3}\ \text{cm})(5.11 \times 10^{9}\ \text{cm})}{7.3 \times 10^{7}\ \text{cm}}$ = _____

4. $\dfrac{28.62\ \text{s} - 3.5\ \text{s}}{(32.9 \times 10^{2}\ \text{s})(99.55 \times 10^{6}\ \text{s})}$ = _____

5. $(6.345\times10^{-17})(2.6447 \times 10^{-45})/ (4.567\times10^{5} + 7.89887\times10^{6})$ = _____

Section 3: Do the following calculations and give the answer on the line provided with the correct number of significant figures and use scientific notation.

_____ 1. Calculate the volume, in liters, of a box that is 75.0 cm long by 55.454 cm wide by 55 cm high.

_____ 2. The Star of India sapphire weighs 563 carats. One carat equals 200.0 mg. What is the weight of the gemstone in grams?

_____ 3. One box of envelopes contains 500 envelopes. A case of envelopes contains 8 boxes of envelopes and costs $28.49. What is the cost, in cents, of an envelope?

_____ 4. White Gold is composed of 90% gold and 10% palladium. How much gold is present in 5674 g of white gold?