Worksheet 1: Chapter 1 Lecture Problems

1. Write the following in scientific notation: 345.9 nm 0.0054 mL 0.00000050 kg

93,000,000 miles (ave. distance from Earth to Sun) 0.00000000000000000000000167 g

2. Calculate: $15.05 \times [1.6 \times 10^{-3}] \div [9.46 \times 10^{-8}] =$

3. Convert: 45 m to cm 0.012 km to m
   35.8 μs to cs 0.000095 km to nm

4. How many cm^2 in 1 m^2? How many cm^2 are in an object 3.94 in × 3.94 in?

   How many cm^3 are in 1 m^3? How many cc are in a 125 in^3 engine?

5.

How many sig figs in each number			
3.4680		34,608	
0.3468		3,460,800	
0.03468		3.4600×10^{-2}	
0.034680		3.46×10^{-2}	

6.

Underline the sig figs		
303.68 m	0.001 g	141,000 residents
0.010 sec	25.0 ml	14 eggs (counted)
5.883×10^{32} atoms	12.20 μg	

7. Rules for Sig Figs:
   For multiply/divide, use the _____

   For addition/subtraction, use the _____

8. $$\frac{(1.01 \times 10^{7}) \times (4.059 \times 10^{5})}{(319.4 - 318.7) \times (4.2 + 9.7)}$$

9. (3.052 km + 1114.2 m) ÷ 62.12 s

10. The density of iron is 7.86 g/cm^3. What is the volume of 10.5 g of iron?

11. Convert the following temperatures
    a. 83.2 °C to °F b. 15.8 °F to K