Homework #1  Name _____________________

Chem 30A  Dr. Harrison

1. (4 pts) Determine the number of significant figures in the following measurements.

   a) 40,000 g _______
   c) 080.40 g _______

   b) 40,001 g _______
   d) 1.00 x 10^-4 g _______

2. (4 pts) Using scientific notation convert the following measurements to three significant figures.

   a) 40,000 g ___________________
   b) 0.00084060 g _____________________
   c) 23.499 m ___________________
   d) 0.003456 x 10^8 g ___________________

3. (2 pts) Do the following operations keeping in mind significant figures.

   a) 3.040 x 10^-4 g = ___________
      \[.0036014 \text{ ml} \]
   b) 343.08 g + 10.1 g

4. (2 pts) How many milliliters in 2.3 gallons of gas? 1 L = 1.06 qt. 1 gallon = 4 quarts
5. (2 pts) A train is traveling at 78.4 miles per hour. Convert this velocity to hectometers per min. Use the following conversions: 1 m = 39.4 inch, 60 min = 1 hour, 1 mile = 5280 ft, 1 ft = 12 inch

6. (2 pts) The area of a triangle is 67.4 in\(^2\). Convert this area to m\(^2\). (1 inch = 2.54 cm)

7. (2 pts) A graduated cylinder contains 18.0 mL of water. What is the new water level after 35.6 g of silver metal with a density of 10.5 g/mL is submerged in the water?

8. (2 pts) Complete the following conversions using proper scientific notation format where appropriate.

   a) 34.8 km to dm ____________________
   b) 3.4 \times 10^{-8} \text{ cm} to hm ____________________