Introduction to Chemistry Quiz #1

1. (20 points) How many significant figures are in each of these numbers?
   (a) 9.0100 ________________  (b) 20,200 ________________
   (c) 0.0600 ________________  (d) 0.7020 ________________

2. (20 points) Round off each number to the three significant figures.
   (a) 125.80 ________________  (b) 0.2006 ________________
   (c) 7.0600 ________________  (d) 1,727.2 ________________

3. (20 points) Use the factor-units method to complete each of these calculations. Show each step, and express each answer in scientific notation to the proper number of significant figures.
   (a) 11,280 kg = ? mg

   (b) 2.466 \times 10^{11} \text{ feet} = \, ? \text{ mm}

   (c) 1.020 \times 10^3 \text{ lbs / ft}^3 = \, ? \text{ g / km}^3
4. (20 points) Consider an ice sample from Saturn’s largest moon, Titan.

(a) If the ice is 5.5% CH$_4$ (methane), and CH$_4$ is 75% carbon, what mass of carbon, in grams, is in 2.55 g of the original ice sample? All percentages refer to mass.

(b) What is the ice sample’s volume in milliliters if its density is 1.02 g / cm$^3$?

5. (10 points) This is the set of exercises due last Monday and returned Wednesday.

6. (10 points) This is the set of exercises due today.