CHEM 130 **Name** _____
Quiz 1 – June 9, 2016

Complete the following problems. Write your final answers in the blanks provided. You must show your work to receive full credit. Show your answers to the correct number of significant figures with the correct units.

1. How many significant figures in each measurement?(5 pts)

Measurement	0.00312 m	312,000 s	3.12×10^5 km	346.020 s	0.05050 L
# Sig. Figs.	3	3	3	6	4

2. Classify the following as chemical (C) or physical (P) changes by circling the appropriate letter. (3 pts)

   a. C or **P**: The liquid propane in a BBQ grill evaporates away because you forgot to close the valve on the tank.
   b. **C** or P: Copper metal turns green on exposure to air and water.
   c. C or **P**: Sugar dissolves in hot water.

3. Perform the following conversions. Report your answers in both scientific and decimal notation. (10 pts.)

   a. 1.350×10^{-13} km (diameter of a gold atom)= __135.0 or 1.350×10^2_____ pm

$$1.350 \times 10^{-13}\ \cancel{km} \times \frac{10^3\ \cancel{m}}{1\ \cancel{km}} \times \frac{1\ pm}{10^{-12}\ \cancel{m}} = 135.0\ pm$$

   b 3.64×10^7 mg/cm^2 = _364,000,000 or 3.64×10^8 _____ g/m^2

$$\frac{3.64 \times 10^7\ \cancel{mg}}{\cancel{cm}^2} \times \frac{10^{-3}\ g}{1\ \cancel{mg}} \times \frac{(1\ \cancel{cm})^2}{(10^{-2}\ m)^2} = \frac{3.64 \times 10^8\ g}{m^2}$$

4. We are working in lab preparing waste for pickup by our waste disposal company. We have 126.25 L of liquid waste to dispose. If it costs $20.00 per kilogram for disposal and if the density of the waste is 1.13 g/mL, how much will it cost to dispose of this waste? (8 pts)

$$126.25\ \cancel{L} \times \frac{1\ mL}{10^{-3}\ L} \times \frac{1.13\ g}{1\ mL} \times \frac{1\ kg}{10^3\ g} \times \frac{\$20.00}{1\ kg} = \$2853.26 = \mathbf{\$2850}$$

Answer____**$2850**_____