## CHM 1045 Chapter 1 Home Work

1.	Review Examples 1.02, 1.04, and 1.05. Define the terms mass, weight, and density. Determine the volume of 5.000 g isopropyl alcohol, which has a density of 0.786 g/ml. Show the equation. Include all of the units and count the number of significant digits. (2 pts)
2.	Review page 2 of the chapter 1 notes. Define the terms physical property and physical change. List at least four physical properties of water which contain numerical values with SI units, such as melting/boiling points, density, or molecular weight. Include both the numerical values and the units. (2 pts)
3.	Define the term chemical property. Describe a chemical property of water by showing a balanced chemical reaction where it is the reactant or the product. You can look up the reaction in the notes, text, or on any academic website. (1 pt)

4. Review Example 1.07 and these tables for <u>Prefixes</u> and <u>Derived Units</u>. Given that the world's <u>oceans</u>, <u>seas</u>, <u>and bays</u> contain a total of  $1.338 \times 10^9$  km<sup>3</sup> of salt water, determine the volume in both m<sup>3</sup> and cm<sup>3</sup>, as well as the mass in grams. Show all of the equations. Include all units and all conversion factors. Show how you derived the two conversion factors for volume. Report all of the values in proper scientific notation, and count the correct number of significant digits. Use 1.03 g/cm<sup>3</sup> as the density of sea water. (3 pts)

5. Review Example 1.08 and this table of <u>Conversion Factors</u>. Convert the total mass of salt water from problem 4 into ounces and then into pounds. Show all of the equations. Include all units and all conversion factors. Report both values in proper scientific notation with the correct number of significant digits. (2 pts)