1. Perform the following calculations. Express each answer with the appropriate number of significant figures.
2. Calculate the weight (in lbs) of a cylinder of stainless steel (d = 7.75 g/cm3) with a height of 18.35 cm and radius 1.88 in. For a cylinder, .

1. A bag of Hershey’s Kisses contains the following information.

Serving size: 9 kisses = 41 grams

Calories per serving: 230

Total fat per serving: 13 grams

1. The density of a Hershey’s kiss is 1.4 g/mL. What is the volume of a single Hershey’s kiss in milliliters?
2. How many Calories are in one Hershey’s kiss?
3. Each gram of fat yields 9 Calories when metabolized. What percentage of the Calories in a serving of Hershey’s kisses are derived from fat?
4. The bag contains 2.0 lbs of Hershey’s Kisses. How many kisses are in the bag?
5. For the ion 228Ra2+, determine
   1. the number of protons, neutrons, and electrons in 228Ra2+
   2. the atomic symbol (including the atomic number) after adding an electron to 228Ra2+
   3. the atomic symbol (including the atomic number) after adding a neutron to 228Ra2+
   4. the atomic symbol (including the atomic number) after adding a proton to 228Ra2+

1. An element, X, has two naturally occurring isotopes: 107X, 51.84% and 109X, 48.16%. The mass of 107X is 106.905092 amu. The mass of 109X is 108.970930 amu. What is the average atomic mass of element X.
2. Determine the mass percent of each of the elements in to four significant figures.

1. Consider a compound with a percent composition of 38.37% C, 1.49% H, 52.28 % Cl, and 7.86 % O by mass. If 0.1250 moles of the compound contains 203.44 grams, what is the molecular formula of the compound?
2. A 25.0 mL sample of HCl is diluted to a volume of 0.500 L. If the concentration of the diluted solution is found to be 0.085 M HCl, what was the concentration of the original solution?
3. The molecular formula of bisphenol A (BPA) is . If 35.0 mL of pure BPA has a density of 1.20 g/mL, how many atoms of oxygen are in the 35.0 mL sample?