4.5 – Percent Composition – Worksheet

1. What is the percentage composition of CaO?

2. Calculate the mass percentage composition of each compound.
   a) $MgCl_2$ b) Na_2SO_4 c) Fe_2O_3 d) $C_7H_5N_3O_6$

3. Determine the percent composition of $Ca_3(PO_4)_2$

4. A sample of a liquid with a mass of 8.657 grams was decomposed into its elements and gave 5.217 grams of carbon, 0.9620 grams of hydrogen, and 2.478 grams of oxygen. What is the percentage composition of this compound?

5. Calculate the percentage of nitrogen in the two important nitrogen fertilizers, ammonia, NH_3 and urea, $CO(NH_2)_2$

6. A 27.0 g sample of a compound contains 7.20 g of C, 2.20 g of hydrogen and 17.6 g of oxygen. Calculate the percentage composition of the compound.

7. Carbon will burn in sufficient oxygen to produce carbon dioxide. In an experiment 8.40 grams of C reacts with oxygen and 30.80 grams of carbon dioxide is produced.
   a) What mass of oxygen reacted with the 8.40 grams of C?

   b) Calculate the percentage composition of the carbon dioxide.

8. In one sample of a compound of copper and oxygen, 3.12 g of the compound contains 2.50 g of copper and the remainder is oxygen. In another sample of a compound of copper and oxygen, 1.62 g of the compound contain 1.44 grams of copper and the remainder is oxygen.
   a) Calculate the percentage composition of each compound.

   b) Are the two samples the same compound? Justify your answer.