Chemistry: Using Percentage in Compound Composition

For each problem below, show your work and box in the answers. Be sure to include the proper unit on your final answer.

1. Table sugar (C\textsubscript{12}H\textsubscript{22}O\textsubscript{11}) is 6.4% hydrogen, 42.1% carbon, and 51.5% oxygen by mass. How many grams of each of these elements are in a 65.8 g sample of sugar?

2. Aluminum oxide (Al\textsubscript{2}O\textsubscript{3}) is 52.9% aluminum by mass. How many grams of oxygen are in a 613 g sample of aluminum oxide?

3. If a sample of a certain compound contains 2.0 g of hydrogen, 32.0 g of sulfur, and 64.0 g of oxygen...
   a) What is the total mass of the sample?
   b) What percentage of the compound (by mass) is...
      ...hydrogen?
      ...sulfur?
      ...oxygen?

4. If a 58.5 g sample of table salt (NaCl) contains 23.0 g of sodium and 35.5 g of chlorine, how many grams of sodium and chlorine are there in a 126 g sample of salt?

5. If a particular sample of HNO\textsubscript{3} contains 2.0 g of hydrogen, 28.0 g of nitrogen, and 96.0 g of oxygen, how many grams of each will you have in a 350.0 g sample of HNO\textsubscript{3}?

Answers: 
1. 4.2 g H, 27.7 g C, 33.9 g O 
2. 289 g O 
3a. 98.0 g 
3b. 2.04% H, 32.65% S, 65.31% O 
4. 49.5 g Na, 76.5 g Cl 
5. 5.6 g H, 77.8 g N, 266.7 g O