Percentage Composition Calculation

$$\%\ by\ mass = \frac{A_r\ x\ number\ of\ atoms\ in\ a\ compound}{M_r\ of\ the\ compound}\ x\ 100$$

Answer the questions below.

1. Calculate the percentage by mass of carbon in carbon monoxide, CO.
2. Calculate the percentage by mass of hydrogen in HCl.
3. Calculate the percentage composition of sodium in sodium chloride, NaCl.
4. Calculate the percentage composition of sodium in sodium hydrogen carbonate, $NaHCO_3$.
5. Calculate the percentage of oxygen in sodium hydrogen carbonate, $NaHCO_3$.
6. Calculate the percentage by mass of lithium in lithium hydroxide, LiOH.
7. Calculate the percentage by mass of hydrogen in lithium hydroxide, LiOH.
8. Which makes up the greater percentage by mass in lithium hydroxide (LiOH), oxygen or lithium? Show your working.
9. Calculate the percentage by mass of carbon in calcium carbonate, $CaCO_3$.
10. Calculate the percentage by mass of oxygen in potassium permanganate, $KMnO_4$.

Stretch:

11. In a sample of water with a mass of 10 g, what percentage of that mass is made of hydrogen atoms?
12. The percentage by mass of oxygen in a compound is 66.7%. The compound has the formula XO, where X is a metal and O is oxygen. What is the compound?