

Name:	Class:
Teacher:	Date:

Calculating masses of reactants and products in chemical reactions.

1. 10g of calcium carbonate produces 4g of carbon dioxide when heated and decomposed completely as shown in the equation shown below.. How much calcium oxide is produced?



2. Jean combusts 22g of iron. After total combustion the mass of the product is 30.4g.
- Why is there an increase in mass?
 - Write a balanced chemical equation to represent this reaction.
 - Name the substance with a mass of 30.4g.
 - How much oxygen is needed for this reaction?
 - Calculate the volume of oxygen used, given that 1L has a mass of 1.2g.
3. 112g of iron produces 144g of iron(II)oxide during combustion.
- What mass of oxygen is needed? (assume complete combustion)
 - What is the % oxygen in the iron(II) oxide?
4. What mass of sulphur would react with 7.5 g of oxygen to produce 15g of Sulphur dioxide?
5. 32g of Copper produced 36g of Copper oxide.
- Calculate the mass of oxygen used for this reaction.
 - Calculate the % copper in the copper oxide.
6. Iron is combusted in a container that contains 500L of oxygen. Before combustion there is 3g of iron, after combustion there is 1.4g of iron.
- How much iron is combusted?
 - Calculate the volume of oxygen used given 1L of oxygen has a mass of 1.2g.
7. To combust completely 7g of iron, 2L of oxygen is needed. For each of the following state if any unreacted iron rests after combustion and if it does how much.
- 2g of iron and 500mL oxygen.
 - 1g of iron and 300mL oxygen.
 - 1.75g of iron and 500mL oxygen.
8. There exists two oxides of copper. Copper(I)oxide – Cu_2O and Copper(II)oxide CuO . Calculate the % of copper atoms in each.
9. Two oxides of iron are analysed, in the first there is found to be 50% iron and 50% oxygen. In the second 40% iron and 60% oxygen. Use this information to find the formulas of the two oxides.
10. For 72g of iron(II) oxide need 56g of iron.
 For 160g iron(III) oxide need 112g of iron.
 For 232g of magnetic iron oxide need 168g of iron.
- Calculate the mass of iron in 100g of each of the above.
 - Which oxide is the most rich in oxygen? Explain your answer clearly.