

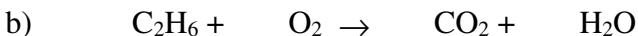
Review #5: Chemical Equations and Stoichiometry

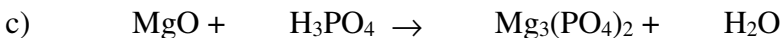
1. Define limiting factor. Why is it significant?

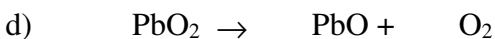
2. Balance these expressions and classify the type of reaction.

Type of Reaction

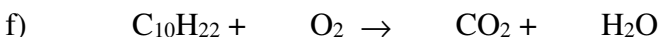
















_____ Can't classify

3. For the reaction: $2 \text{Fe}_2\text{O}_3 (\text{s}) + 3 \text{C} (\text{s}) \rightarrow 4 \text{Fe} (\text{s}) + 3 \text{CO}_2 (\text{g})$

What mass of iron will be produced when 50.0 g of iron(III) oxide react with an excess of carbon?

4. For the reaction: $2 \text{KClO}_3 (\text{s}) \rightarrow 2 \text{KCl} (\text{s}) + 3 \text{O}_2 (\text{g})$

a) What volume of oxygen gas, measured at STP, is formed by the reaction of 75.0 g of potassium chlorate?

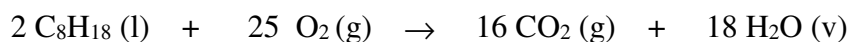
b) How many moles of potassium chlorate must react in order to form 2.5 g of potassium chloride?

5. For the reaction: $6 \text{CO}_2 (\text{g}) + 6 \text{H}_2\text{O} (\text{l}) \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 (\text{s}) + 6 \text{O}_2 (\text{g})$

a) Which substance is in excess when 100.0 g of carbon dioxide and 50.0 g of water are reacted?

b) How much glucose will be produced by the reaction in part (a)?

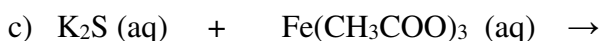
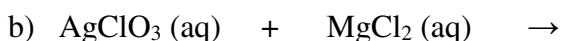
6. Octane burns according to the reaction:



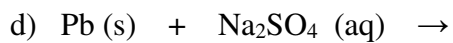
a) What mass of carbon dioxide will be produced when 180.0 g of octane are completely burned?

b) What volume of carbon dioxide, at STP, will be produced when 62.7 g of oxygen are completely reacted?

7. Predict the products of the following reactions. Balance the equations. Indicate the states of all products by referring to the solubility rules to predict if a precipitate will form.



8. Referring to the activity series to the right, which of the following reactions will proceed (take place)? If a reaction will occur, write the products (including their states) and balance the equation. If a reaction will not proceed, write "NR" (no reaction):



**Activity Series
for Metals:**

Lithium
Potassium
Barium
Calcium
Sodium
Magnesium
Aluminum
Zinc
Iron
Nickel
Tin
Lead
Hydrogen
Copper
Silver
Gold