ANSWER KEY

Stoichiometry - Sheet #1: Mass - Mass Problems

Questions	Answers
1. When 142 g of calcium fluoride are reacted with an excess of sodium bromide, calculate the mass of calcium bromide formed.	364 g $CaBr_2$
2. How many grams of sodium aluminate can be obtained from 7.71 g of aluminum chloride according to the reaction: $AlCl_3(aq) + 4NaOH(aq) \rightarrow NaAlO_2(aq) + 3NaCl(aq) + 2H_2O(l)$	4.74 g $NaAlO_2$
3. How many grams of carbon dioxide are obtained when 2.96 g of cerium(III) oxalate are formed according to the reaction: $2Ce(IO_3)_4(aq) + 24H_2C_2O_4(aq) \rightarrow Ce_2(C_2O_4)_3(aq) + 4I_2(aq) + 42CO_2(g) + 24H_2O(l)$	10.1 g CO_2
4. Calculate the mass of sodium permanganate that can be prepared from 1.27 g of sodium bismutate according to the reaction: $2Mn(NO_3)_2 + 5NaBiO_3 + 14HNO_3 \rightarrow 2NaMnO_4 + 5Bi(NO_3)_3 + 3NaNO_3 + 7H_2O$	0.758 g $NaMnO_4$
5. If excess sulfuric acid is reacted with sodium hydroxide, 15.0 g of water is formed. What mass of sodium hydroxide was used?	33.3 g NaOH
6. 50.0 g of calcium carbonate was added to excess phosphoric acid. What mass of calcium phosphate was formed?	51.7 g $Ca_3(PO_4)_2$
7. Calculate the mass of barium nitrate that must decompose in order to produce 112 g of oxygen. $Ba(NO_3)_2 \rightarrow Ba(NO_2)_2 + O_2$	915 g $Ba(NO_3)_2$
8. Calculate the mass of potassium chloride that is produced when 17.0 g of potassium carbonate reacts with hydrochloric acid.	18.3 g KCl
9. When "x" grams of calcium chloride was reacted with an excess of bromine, 14.0 kg of a gas was formed. Calculate "x". $CaCl_2 + Br_2 \rightarrow CaBr_2 + Cl_2$	21.9 kg $CaCl_2$
10. How many grams of zinc oxide are formed when 10.0g zinc reacts with oxygen?	12.4 g ZnO
11. Sodium nitrate decomposes to give 3.00 g of oxygen. Calculate the mass of sodium nitrate used. $2NaNO_3 \rightarrow 2NaNO_2 + O_2$	15.9 g $NaNO_3$

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12. Potassium metal reacts with 70.0 g of chlorine. Calculate the mass of product.	147 g KCl
13. Calculate the mass of magnesium oxide that must be decomposed in order to produce 48.0 g of oxygen. $2\,MgO \rightarrow 2\,Mg + O_2$	121 g MgO