Mixed Stoichiometry Practice

1. Potassium chlorate decomposes into potassium chloride and oxygen gas.
   Balanced Equation:

2. How many moles of oxygen are produced when 3.0 moles of potassium chlorate decompose completely?

3. Butane (C_4H_{10}) undergoes combustion.
   Balanced Equation:

   _____ $C_4H_{10}(l)$ + _____ $O_2(g) \rightarrow$ _____ $CO_2(g)$ + _____ $H_2O(l)$

4. How many grams of CO_2 are produced when 88 g of O_2 are reacted with an excess of butane?

5. Water decomposes into hydrogen gas and oxygen gas by electrolysis.
   Balanced Equation:

6. How many grams of hydrogen will be produced when 6.0 moles of oxygen are produced?

7. How many grams of water are required to produce 9.00 grams of hydrogen?

8. Cobalt(II) chloride reacts with fluorine in a single replacement reaction to produce cobalt(II) fluoride and chlorine gas.
   Balanced Equation:

   _____ $CoCl_2$ + _____ $F_2 \rightarrow$ _____ CoF_2 + _____ Cl_2

9. How many grams of fluorine are required to produce 290.8 g of cobalt(II) fluoride?

10. Balance the following equation.
    ____ $SrCl_2(aq)$ + _____ $H_2SO_4(aq) \rightarrow$ _____$HCl(aq)$ + ____$SrSO_4(s)$

11. What is the mass of strontium chloride that reacts with 300.0 g of sulfuric acid?

12. Solid iron(III) oxide reacts with hydrogen gas to form iron and water.
    Balanced Equation:

13. How many grams of iron are produced when 450 grams of iron(III) oxide are reacted?

14. How many grams of water will be produced when 0.0155 moles of hydrogen gas react completely with iron(III) oxide?