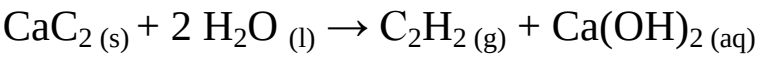
Name _____ Date _____ Box #___

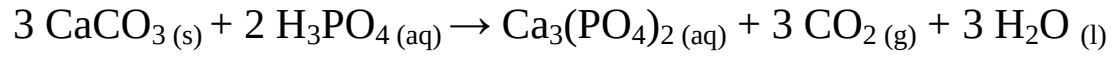
Stoichiometry Practice Problems

1. How many grams of acetylene (C_2H_2) are produced if you have 5.00 g CaC_2?



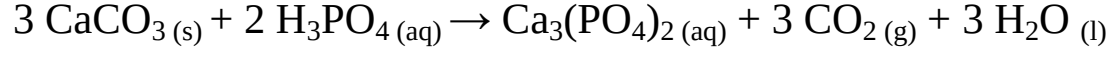
$$CaC_{2\,(s)} + 2\ H_2O_{\,(l)} \rightarrow C_2H_{2\,(g)} + Ca(OH)_{2\,(aq)}$$

2. How many grams of H_3PO_4 react with excess calcium carbonate to produce 3.74 g $Ca_3(PO_4)_2$?



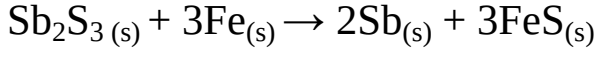
$$3\ CaCO_{3\,(s)} + 2\ H_3PO_{4\,(aq)} \rightarrow Ca_3(PO_4)_{2\,(aq)} + 3\ CO_{2\,(g)} + 3\ H_2O_{\,(l)}$$

3. Calculate the number of grams of carbon dioxide formed when 0.773 g H_2O is produced.



$$3\ CaCO_{3\,(s)} + 2\ H_3PO_{4\,(aq)} \rightarrow Ca_3(PO_4)_{2\,(aq)} + 3\ CO_{2\,(g)} + 3\ H_2O_{\,(l)}$$

4. When 15.0 g Sb_2S_3 reacts with an excess of Fe, how many grams of Sb are produced?



$$Sb_2S_{3\,(s)} + 3Fe_{(s)} \rightarrow 2Sb_{(s)} + 3FeS_{(s)}$$

5. If this reaction produces 9.84 g Sb, how many grams of Fe are needed?

$$Sb_2S_{3\,(s)} + 3Fe_{(s)} \rightarrow 2Sb_{(s)} + 3FeS_{(s)}$$

6. How many grams of zinc are needed to react with 1.49 g HNO_3?

$$4\ Zn_{(s)} + 10\ HNO_{3\,(aq)} \rightarrow 4Zn(NO_3)_{2\,(aq)} + NH_4NO_{3\,(aq)} + 3H_2O_{\,(l)}$$

7. How many grams of HNO_3 are needed to form 29.1 g NH_4NO_3?

$$4\ Zn_{(s)} + 10\ HNO_{3\,(aq)} \rightarrow 4Zn(NO_3)_{2\,(aq)} + NH_4NO_{3\,(aq)} + 3H_2O_{\,(l)}$$