**Stoichiometry Worksheet #3 (mass-mass problems)**

1. Li3N(s) + 3H2O(l) → NH3(g) + 3LiOH(aq)­
   1. What mass of lithium hydroxide are produced when 0.38g of lithium nitride react?

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* 1. How many grams of lithium nitride would react with 4.05g of H2O?

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1. \_\_NaI(s) + \_\_Cl2(g) → \_\_NaCl(s) + \_\_I2(g) Balance and answer the following questions.
   1. What mass of sodium chloride is produced when 0.294g of sodium iodide react?

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* 1. If 5.80g of iodine is formed, what is the mass of sodium iodide that reacted?

1. In the combustion of 54.50g of butane (C4H6), how many grams of CO2 are produced? Write and balance the equation before solving.
2. In the following **unbalanced** equation,

\_\_\_ FeS2 + \_\_\_O2 → \_\_\_Fe2O3 + \_\_\_SO2

* 1. How many grams of iron (IV) sulphide are used when 9.0g of O2 react?

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* 1. What is the mass of iron (III) oxide produced when 25.0g of iron (IV) sulphide are used?

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1. Write and balance the double replacement reaction between lead (II) nitrate and sodium chloride. What is the mass of each product when 50.0g of lead (II) nitrate react?

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1. Cu + 2AgNO3 → 2Ag + Cu(NO3)2

How many grams of silver are produced when 36.92g of copper react?

1. \_\_\_Al2(SO4)3 + \_\_\_Ca(OH)2 →\_\_\_Al(OH)3 + \_\_\_CaSO4

Balance and answer the following questions.

* 1. What mass of aluminum (III) hydroxide are produced if 165.7g of aluminum (III) sulfate react?
  2. How many grams of calcium hydroxide are needed to form 6.35g of calcium sulphate?

1. Balance and then answer the following questions:

\_\_F2 +\_\_AlBr3 → \_\_Br2 + \_\_AlF3

* 1. If 8.4g of aluminum bromide react, how many grams of bromine are produced?
  2. If 90 g of aluminum fluoride are made, how many grams of fluorine have reacted?

1. 2 KI + Pb(NO3)2 → PbI2 + 2KNO3
   1. Calculate the mass of PbI2 produced by reacting 30.0g KI.

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* 1. What mass of Pb(NO3)2 is required to make 50.69g of KNO3?

1. Write and balance the single replacement between aluminum and zinc chloride. What is the combined mass of the products when 3.0g of zinc chloride react?