

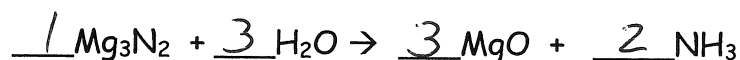
Stoich. Problems

Name Key Period _____ Date _____

Answer true or false for each of the following:

- T 1. Coefficients can represent the number of moles of reactants and products.
- F 2. Coefficients can represent the number of grams of reactants and products.
- F 3. In the equation $2\text{Na} + \text{Cl}_2 \rightarrow 2\text{NaCl}$; 2 moles of sodium are reacting with 2 moles of chlorine gas.

Use this unbalanced equation for the following questions:



- 3 1. How many moles of water react with 1 mole of Mg_3N_2 ?
- 3 2. How many molecules of MgO are produced if 1 molecule of Mg_3N_2 reacts with 3 molecules of H_2O ?

magnesium oxide or 3. Name a product in this reaction
(use words, not symbols)

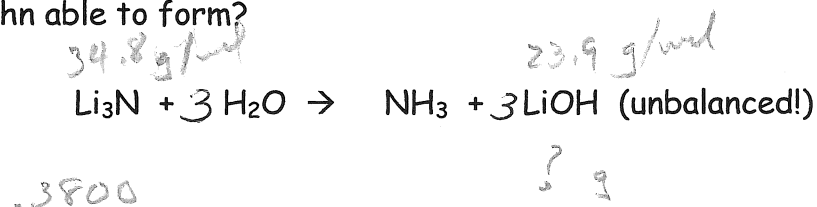
Double Replacement 4. What type of reaction is this?

coeff. subscript 5. The 3 in Mg_3N_2 is called a what?

Coeff. 6. The number in front of H_2O is called a what?

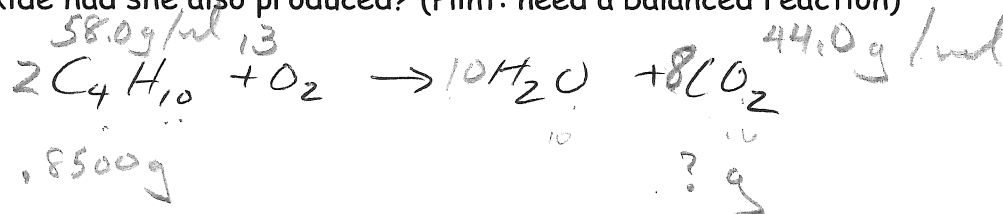
Perform the necessary calculations to solve each of the following problems. Show all work, give units, and observe sig fig rules!

- (1) John reacted 0.3800 g of lithium nitride with water according to the unbalanced equation below. How many grams of lithium hydroxide was John able to form?



$$\frac{0.3800 \text{ g Li}_3\text{N}}{34.8 \text{ g/mol}} \times \frac{3 \text{ mol LiOH}}{1 \text{ mol Li}_3\text{N}} \times \frac{23.9 \text{ g}}{1 \text{ mol}} = 1.783 \text{ g LiOH}$$

- (2) Kelly measured the mass of a butane lighter and then used it. After extinguishing the flame she again measured the mass and determined that she had used 0.8500 g of butane, C_4H_{10} . How many grams of carbon dioxide had she also produced? (Hint: need a balanced reaction)



$$\frac{0.8500 \text{ g C}_4\text{H}_{10}}{58.0 \text{ g/mol}} \times \frac{8 \text{ mol CO}_2}{2 \text{ mol C}_4\text{H}_{10}} \times \frac{44.0 \text{ g}}{1 \text{ mol}} = 2.58 \text{ g CO}_2$$