

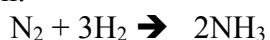
## Stoichiometry Homework

1. Glucose is used as a source of energy by the human body. The overall reaction in the body is



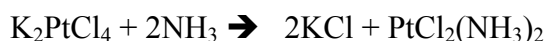
Calculate the number of grams of oxygen need to oxidize 12.5 grams of glucose to carbon dioxide and water

2. Ammonia is synthesized from hydrogen and nitrogen according the following reaction:



If an excess of nitrogen is reacted with 3.41 g of hydrogen, how many grams of ammonia can be produced?

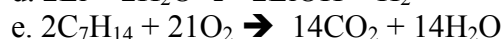
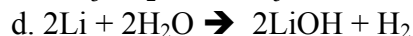
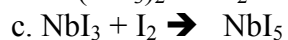
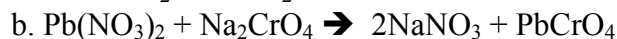
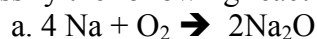
3. Assume that in the decomposition of potassium chlorate,  $\text{KClO}_3$ , 80.5 g of  $\text{O}_2$  form. How many grams of potassium chloride, the other product, would be formed?
4. In a single displacement reaction, 9.23 grams of aluminum react with excess hydrochloric acid. How many grams of hydrogen gas will be produced?
- 5-6. The compound "cisplatin,"  $\text{PtCl}_2(\text{NH}_3)_2$ , has been found to be effective in treating some types of cancer. It can be synthesized using the following reaction:



5. How much cisplatin can be produced from 2.50 grams of  $\text{K}_2\text{PtCl}_4$  and excess  $\text{NH}_3$ ?

6. How much  $\text{NH}_3$  would be required to complete the previous reaction?

7. Classify the following reactions. (These rxns will be used in questions 8-13):



8. What mass of sodium oxide is produced by the reaction of 1.44 g of sodium with excess oxygen?
9. How much lead II nitrate will be needed to react with sodium chromate to produce 4.62 kg of lead II chromate?
10. What quantity of hydrogen gas is formed when 0.85 g of lithium reacts with water?
11. How much lithium hydroxide will be formed in the reaction from question 10?
12. What mass of water is given off when 192 kg of  $\text{C}_7\text{H}_{14}$  burn completely in air?
13. How much oxygen is required to complete the reaction in question 12?