

CH101 Fall 2018  
Take Home Discussion Quiz #5

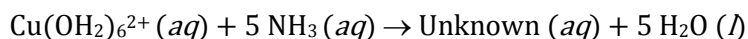
Name: \_\_\_\_\_

TF's Name: \_\_\_\_\_

Time: \_\_\_\_\_

**Work must be present to receive any credit. All work has to be done individually.**

1. (3 points) If 501 grams of  $\text{Cu}(\text{OH}_2)_6^{2+}$  reacts with 108 grams of ammonia, two products are formed. One product is water and the other is unknown. How many grams of the unknown compound will be formed? Assume 100% yield. *Hint: You do not need to know the formula for the unknown compound.*



Amount of Unknown = \_\_\_\_\_ g

2. (3 points) 80. grams of iron(III) oxide and 54 grams of aluminum react to form an elemental iron and aluminum oxide. In the lab you only manage to get 75% yield.
- a. How many grams of the non-limiting reagent remains?

- b. How many grams of the limiting reagent remains?

- c. How many grams of an elemental iron is formed?

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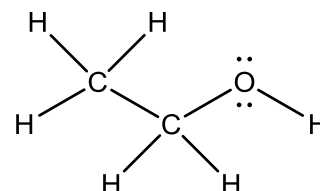
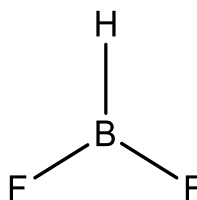
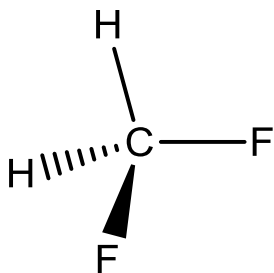
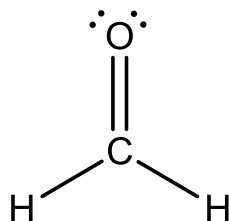
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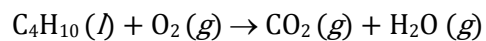
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3. (2points) For each molecule write the molecular shape in the box below:



Molecular Shape around "O"

4. (2 points) Consider the combustion reaction for butane:



If only 132 grams of  $\text{CO}_2$  was formed and it has a 75% yield what was initial amounts of the reagents in grams?

Amount of  $\text{C}_4\text{H}_{10} (l) = \underline{\hspace{2cm}} \text{ g}$

Amount of  $\text{O}_2 (g) = \underline{\hspace{2cm}} \text{ g}$