

**Assessment****Chapter 7****BLM 7-10****Chapter 7 Test****Goal**

**Demonstrate and assess your understanding of the concepts studied in Chapter 7.**

**What To Do**

Answer each question in the space provided. If needed, use a separate piece of paper for your calculations and answers and attach to this page.

1. Define the following terms:

(a) limiting reactant:

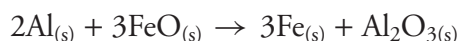
(b) excess reactant:

(c) percentage yield:

(d) percentage purity:

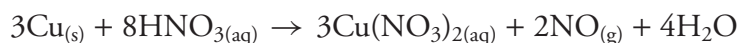
(e) stoichiometry:

2. Iron(II) oxide reacts with aluminum according to the following equation:



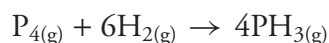
Determine the number of formula units of  $\text{Al}_2\text{O}_3$  produced when six molecules of Fe are produced.

3. Given the following balanced equation:



Determine the mass of copper(II) nitrate that would be formed from the complete reaction of 35.5 g of copper with an excess of nitric acid.

4. (a) What is the maximum mass of  $\text{PH}_3$  that can be formed when 62.0 g of phosphorus reacts with 4.00 g of hydrogen?



(b) If 34.0 g of  $\text{PH}_3$  is actually produced, what is the percentage yield for the reaction?

5. Why is it necessary to maximize the percentage yield for chemical reactions in large-scale industrial reactions?