

Name: _____

30 Pts.

Chemistry Practice Quiz: Stoichiometry

1. Place the correct answer in the space at the left. (10 pts.)
- a.) _____ The coefficients in a balanced chemical equation represent the (mass / moles) ratio of the substances.
 - b.) _____ In a chemical reaction (mass / moles) are conserved.
 - c.) _____ Which type of problem requires more steps? (**A.** mass to mass or **B.** moles to moles)
 - d.) _____ Given: $2\text{SO}_{2(g)} + \text{O}_{2(g)} + 2\text{H}_2\text{O}_{(l)} \rightarrow 2\text{H}_2\text{SO}_{4(l)}$ How many moles of O_2 react with 30. Moles of SO_2 ?
 - e.) _____ from "d.": 50.g of H_2SO_4 is made from 33g of SO_2 , 16 g of O_2 and _?_ g of H_2O .
 - f.) _____ A lab experiment should produce 3.07g of product. 2.60g are actually produced. What is the percent yield?
 - g.) _____ A difficult reaction has only a 38% yield. If 35.1g of product are theoretical, what is the observed yield?
 - h.) _____ We have done 2 labs this chapter. What is the element that you produced in one of these 3 experiments?
 - i.) _____ 0.010 moles of NaCl was formed from 0.0050 moles of Na_2CO_3 . What is the mole ratio of NaCl to Na_2CO_3 ?
 - j.) _____ In a reaction it was determined that 0.225 moles of "A" reacted with 0.675 moles of "B". What is the mole ratio of "A" to "B"? (not "B" to "A")
2. For the reaction: $4\text{POF}_{3(g)} \rightarrow \text{P}_{4(s)} + 2\text{O}_{2(g)} + 6\text{F}_{2(g)}$ (10 pts.)
- a.) _____ How many moles of P_4 are produced from 0.2 moles of POF_3 ?
 - b.) _____ If 0.3.2 moles of F_2 is produced, how many moles of O_2 are also produced?
 - c.) _____ Find the number of moles of POF_3 that are needed to produce 6.4×10^3 moles of F_2 .
 - d.) _____ When 84.5 moles of P_4 are produced ___ moles of O_2 is also produced.
 - e.) _____ How many moles of POF_3 are needed to produce 4.2×10^{-5} moles of P_4 ?
3. How many grams of HCl are needed to react with 3.03 grams of zinc? (2 pts.)
- $$\text{Zn} + 2\text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2$$
4. What mass of sodium hydroxide is produced when 315 grams of hydrogen gas is also produced?
The unbalanced equation is: $\text{Na} + \text{H}_2\text{O} \longrightarrow \text{NaOH} + \text{H}_2$ (3 pts.)
5. A student measures 5.03 grams of iron and reacts it with a solution of copper(II) sulfate. (5 pts.)
- a.) Write a balanced equation for the reaction of iron with copper(II) sulfate
 - b.) What mass of copper should theoretically be produced?
 - c.) If 5.41 grams of copper metal is actually produced what is the percent yield?