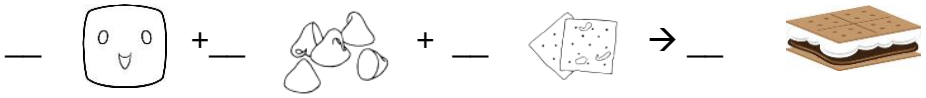
WODSS SCIENCE
SCH 3UI

Name: _____
Date: _____

Stoichiometry



If I have 25 marshmallows, 96 chips and 48 crackers, how many s'mores can we make?_____

_____ in balanced chemical equations tell you the _____ needed for a reaction, and how much product is produced!

$Zn_{(s)}$ + $HCl_{(aq)}$ →

Coefficients can be read as either number of _____.

_____: is a ratio between the coefficients in an equation.

The mole ratios for the above equation are:

Zn:HCl = $HCl:ZnCl_2$ =

$Zn:ZnCl_2$ = $HCl:H_2$ =

$Zn:H_2$ = $ZnCl_2:H_2$=

You can use mole ratios to find the amount of reactants _____ or predict the amount of _____.

*Write the ratio as a **conversion factor as the** _____.

Ex 1. $3MgCl_2 + 2Na_3P \rightarrow Mg_3P_2 + 6NaCl$

a) If 9 mol of $MgCl_2$ is consumed, how many mol NaCl is produced?

b) If 9 mol of $MgCl_2$ is consumed, how many mol of Na_3P react?

c) If 3.2 mol of Na_3P react, what mass of Mg_3P_2 is produced?

d) If 10 g of NaCl was produced, how many moles of Na_3P was reacted?

1. Consider the following reaction:

$$\_\_\_H_2(g) + \_\_\_\_ O_2(g) \rightarrow \_\_\_\_\_H_2O(l)$$

a) Write down all the possible mole ratios

b) How many moles of O_2 are required to react with 100 moles of H_2?

c) How many moles of water are formed when 2478 moles of O_2 react?

d) How many moles of H_2 are required to react completely with 6.02×10^{23} moles of O_2?

2. Aluminum bromide can be prepared by reacting small pieces of aluminum foil with liquid bromine at room temperature. The reaction is accompanied by flashes of red light.

a) Write a balanced chemical equation of the above reaction.

b) How many moles of bromine are needed to produce 5 mol of aluminum bromide?

c) How many moles of aluminum are needed to react?