**CHEMISTRY I HONORS**
**LIMITING AND EXCESS REACTANTS**

# HOW MANY BURRITOS WILL WE MAKE?

1. Here is the "equation" for carne asada burritos: Makes 6 burritos

   2 cups carne asada
   1/2 cup grated cheese
   2 cups guacamole
   1/3 cup diced tomatoes
   1 cup salsa
   6 flour tortillas

   You open your refrigerator and find 2 dozen flour tortillas, 2 lbs of carne asada (1 lb = 1.5 cups), 1.5 cups grated cheese, 3.5 cups salsa, 3 cups of guacamole and 3 tomatoes (1 tomato = 1/2 cup diced tomatoes)

## The Problem:

A. How many delicious carne asada burritos can you make? (REMEMBER, you must follow the given equation -- no substitutions or deletions!!!)

B. Which ingredient determined the number you could make? WHY?

C. How much of each of the other ingredients will be used?

D. How much of these other ingredients will be left over?

## NOW try a similar problem with some "chemicals" (Oh, no!!)

Here's the recipe: $2\ H_{2(g)} + 1\ O_{2(g)} \rightarrow 2H_2O_{(l)}$

You open your chemistry cabinet and find 1.5 moles of hydrogen gas and 0.8 moles of oxygen. Now for the problem . . . . .

A. How many moles of water can be made? (Again, remember, you must follow the recipe and use the correct proportions).

B. Which ingredient was limiting and which was in excess?

C. How much of the excess ingredient is left over?