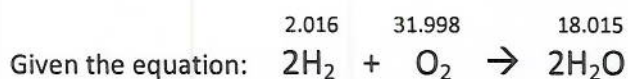


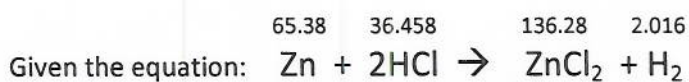
Name _____



2.016 31.998 18.015
10.0 mol 5.00 mol

1. If 10.0 mol of H_2 are reacted with 6.00 mol of O_2 :

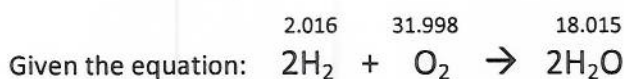
- Which reactant is limiting (used up)? H_2
- Which reactant will be in excess and how many moles will be left over? 1.00 mol O_2
- How many grams of excess reactant will be left over? 32.0 g
- How many moles of water will be formed? 10.0 mol
- How many grams of water will be formed? 180. g H_2O



65.38 36.458 136.28 2.016
2.50 5.00 mol 2.50 2.50

2. If 3.00 mol of Zn are mixed with 5.00 mol of HCl :

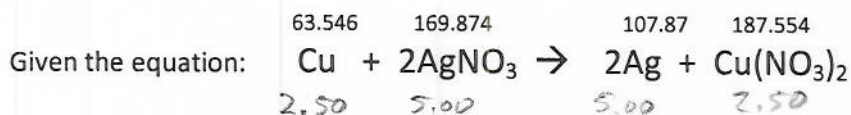
- Which reactant is limiting (used up)? HCl
- Which reactant will be in excess and how many moles will be in excess? 0.50 mol Zn
- How many grams of excess reactant will be left over? 33 g
- How many moles of each product will be formed? 2.50 mol of each
- How many grams of each product will be formed? 341 g ZnCl_2 , 5.04 g H_2



2.016 31.998 18.015
0.0060 0.0030 0.0060

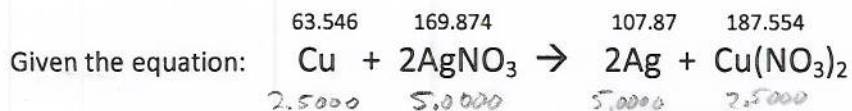
3. If 0.016128 grams of H_2 are reacted with 0.096 grams of O_2 :

- Which reactant will limit the reaction? O_2
- Which reactant will be in excess and how many moles will be in excess? 0.0020 mol H_2
- How many moles of water will be formed? 0.0060 mol
- How many grams of water will be formed by the reaction? 0.11 g H_2O



4. If 3.00 mol of copper and 5.00 mol of AgNO₃ are combined:

- a. Which reactant will be limiting? *AgNO₃*
- b. Which reactant will be in excess and how many moles will be in excess? *Cu .50 mol excess*
- c. How many grams of excess reactant will be left over? *.50 mol Cu / 63.546g / 1 mol Cu = 32 g Cu*
- d. How many moles of each product will be formed? *5.00 mol Ag, 2.50 mol Cu(NO₃)₂*
- e. How many grams of each product will be formed? *539 g Ag, 469 g Cu(NO₃)₂*

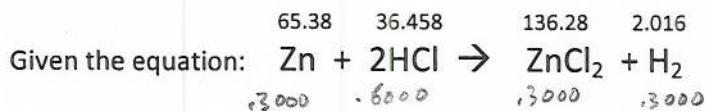


5. If 190.638 grams of copper and 849.37 grams of AgNO₃ are combined:

3.0000 mol

5.0000 mol

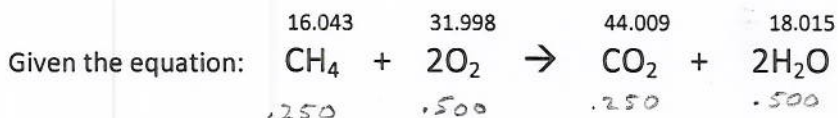
- a. Which reactant will be limiting? *AgNO₃*
- b. Which reactant will be in excess and how many moles will be in excess? *Cu .5000 mol excess*
- c. How many grams of excess reactant will be left over? *31.77 g Cu*
- d. How many moles of each product will be formed? *5.0000 mol Ag, 2.5000 mol Cu(NO₃)₂*
- e. How many grams of each product will be formed? *539.35 g Ag, 468.89 g Cu(NO₃)₂*



6. If 19.614 grams of Zn are mixed with .70 mol of HCl:

.3000 mol

- Which reactant is limiting (used up)? *Zn*
- Which reactant will be in excess and how many moles will be in excess? *.1000 mol HCl*
- How many grams of excess reactant will be left over? *3.6 g HCl*
- How many moles of each product will be formed? *.3000 mol of each*
- How many grams of each product will be formed? *40.88 g ZnCl₂, 0.6048 g H₂*



7. If 4.01 grams of CH₄ are reacted with 19.2 grams of O₂:

.250 mol

.600 mol

- Which reactant is limiting (used up)? *CH₄*
- Which reactant will be in excess and how many moles will be left over? *.100 mol O₂ left over*
- How many grams of excess reactant will be left over? *3.20 g O₂*
- How many grams of O₂ are used in the reaction? *16.0 g O₂*
- How many moles of each product will be formed? *.250 mol CO₂, .500 mol H₂O*
- How many grams of each product will be formed? *11.0 g CO₂, 9.01 g H₂O*