

### Mole Ratio Worksheet

1) Given this equation:  $\text{N}_2 + 3 \text{H}_2 \rightarrow 2 \text{NH}_3$ , write the following molar ratios:

- a)  $\text{N}_2 / \text{H}_2$                       b)  $\text{N}_2 / \text{NH}_3$                       c)  $\text{H}_2 / \text{NH}_3$

2) Given the following equation:  $8 \text{H}_2 + \text{S}_8 \rightarrow 8 \text{H}_2\text{S}$ , write the following molar ratios:

- a)  $\text{H}_2 / \text{H}_2\text{S}$                       b)  $\text{H}_2 / \text{S}_8$                       c)  $\text{H}_2\text{S} / \text{S}_8$

3) Answer the following questions for this equation:  $2 \text{H}_2 + \text{O}_2 \rightarrow 2 \text{H}_2\text{O}$

a) What is the  $\text{H}_2 / \text{H}_2\text{O}$  molar ratio?

b) Suppose you had 20 moles of  $\text{H}_2$  on hand and plenty of  $\text{O}_2$ , how many moles of  $\text{H}_2\text{O}$  could you make?

c) What is the  $\text{O}_2 / \text{H}_2\text{O}$  molar ratio?

d) Suppose you had 20 moles of  $\text{O}_2$  and enough  $\text{H}_2$ , how many moles of  $\text{H}_2\text{O}$  could you make?

4) Use this equation:  $\text{N}_2 + 3 \text{H}_2 \rightarrow 2 \text{NH}_3$ , for the following problems

a) If you used 1 mole of  $\text{N}_2$ , how many moles of  $\text{NH}_3$  could be produced?

b) If 10 moles of  $\text{NH}_3$  were produced, how many moles of  $\text{N}_2$  would be required?

c) If 3.00 moles of  $\text{H}_2$  were used, how many moles of  $\text{NH}_3$  would be made?

d) If 0.600 moles of  $\text{NH}_3$  were produced, how many moles of  $\text{H}_2$  are required?