

Name _____

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) N_2 / H_2
- b) N_2 / NH_3
- c) H_2 / 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) H_2 / 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 H_2 on hand and plenty of O_2 , how many moles of H_2O could you make?
- c) What is the $\text{O}_2 / \text{H}_2\text{O}$ molar ratio?
- d) Suppose you had 20 moles of O_2 and enough H_2 , how many moles of H_2O 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 N_2 , how many moles of NH_3 could be produced?
- b) If 10 moles of NH_3 were produced, how many moles of N_2 would be required?
- c) If 3.00 moles of H_2 were used, how many moles of NH_3 would be made?
- d) If 0.600 moles of NH_3 were produced, how many moles of H_2 are required?

Answers

1. a) 1:3

b) 1:2

c) 3:2

2. a) $8:8 = 1:1$

b) 8:1

c) ~~8~~:1

3. a) $2:2 = 1:1$

b) 20 mol H_2O

c) 1:2

d) 40 mol H_2O

4. a) 2 moles NH_3

b) 5 moles N_2

c) 2 moles NH_3

d) .9 mol H_2