

Name: \_\_\_\_\_  
Period: \_\_\_\_\_ Date: \_\_\_\_\_

## Mole to Mole WS\_K & L

- 1) In the following reaction,  $2\text{KClO}_3(\text{s}) \rightarrow 2\text{KCl}(\text{s}) + 3\text{O}_2(\text{g})$   
a. What is the mole ratio of potassium chlorate to oxygen?  
  
b. What is the mole ratio of potassium chlorate to potassium chloride?
- 2) In the following reaction,  $\text{NaNO}_3 + \text{K} \rightarrow \text{Na} + \text{KNO}_3$   
a. What is the mole ratio of potassium to potassium nitrate?  
  
b. How many moles of sodium would be produced from 7.5 moles of sodium nitrate and excess potassium?
- 3) In the following reaction,  
 $3\text{CaCl}_2 + 2\text{Al}(\text{OH})_3 \rightarrow 3\text{Ca}(\text{OH})_2 + 2\text{AlCl}_3$   
a. What is the mole ratio of aluminum chloride to calcium chloride?

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a. What is the mole ratio of potassium to potassium nitrate?
- b. How many moles of sodium would be produced from 7.5 moles of sodium nitrate and excess potassium?
- 3) In the following reaction,  
 $3\text{CaCl}_2 + 2\text{Al}(\text{OH})_3 \rightarrow 3\text{Ca}(\text{OH})_2 + 2\text{AlCl}_3$   
a. What is the mole ratio of aluminum chloride to calcium chloride?

b. How many moles of aluminum chloride would produce 12 moles of calcium chloride?

$$4 \begin{matrix} 2:3 > 4 \\ \times:12 \end{matrix}$$

$$\boxed{18 \text{ moles}}$$

4) In the following reaction,  $2\text{H}_2(\text{g}) + \text{O}_2(\text{g}) \rightarrow 2\text{H}_2\text{O}(\text{g})$

a. How many moles of hydrogen would be required to produce 5 moles of water?  $2:2$

$$\boxed{5 \text{ moles}}$$

$$\frac{x \text{ moles H}_2}{5 \text{ moles H}_2\text{O}} = \frac{2 \text{ mol H}_2}{2 \text{ mol H}_2\text{O}}$$

4) In the following reaction,  $2\text{H}_2(\text{g}) + \text{O}_2(\text{g}) \rightarrow 2\text{H}_2\text{O}(\text{g})$

a. How many moles of hydrogen would be required to produce 5 moles of water?

b. How many moles of aluminum chloride would produce 12 moles of calcium chloride?

b. How many moles of oxygen would be required to produce 0.5 moles of water?

$$1:2 \\ 0.25:0.5$$

$$\boxed{\text{scribbled out}}$$

$$\frac{x \text{ mol O}_2}{0.5 \text{ mol H}_2\text{O}} = \frac{1 \text{ mol O}_2}{2 \text{ mol H}_2\text{O}}$$

$$\boxed{1.25 \text{ moles}}$$

b. How many moles of oxygen would be required to produce 0.5 moles of water?

5) In the following reaction,  $6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$

a. If 8 moles of glucose are produced, how many moles of oxygen will be formed?

$$\frac{x \text{ mol O}_2}{8 \text{ mol C}_6\text{H}_{12}\text{O}_6} = \frac{6 \text{ mol O}_2}{1 \text{ mol C}_6\text{H}_{12}\text{O}_6}$$

$$\boxed{48 \text{ mol O}_2}$$

b. How many moles of carbon dioxide and water are required to produce 2.5 moles of glucose?

$$\frac{x \text{ mol CO}_2}{2.5 \text{ mol C}_6\text{H}_{12}\text{O}_6} = \frac{6 \text{ mol CO}_2}{1 \text{ mol C}_6\text{H}_{12}\text{O}_6}$$

$$\boxed{15 \text{ mol CO}_2}$$

5) In the following reaction,  $6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$

a. If 8 moles of glucose are produced, how many moles of oxygen will be formed?

b. How many moles of carbon dioxide and water are required to produce 2.5 moles of glucose?