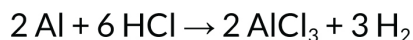


MOLE TO MOLE STOICHIOMETRY WORKSHEET

Name : _____

Date : _____

1. Using the equation

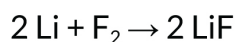


a. Find the number of moles of Al used to produce 9.9 moles of H_2 .

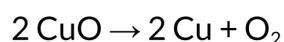
b. Find the number of moles of HCl used to produce 1.11 moles of AlCl_3 .

c. Find the number of moles of AlCl_3 produced along with 0.0757 moles of H_2 .

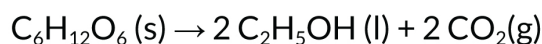
2. The reaction between lithium and fluorine produces lithium fluoride. How many moles of lithium fluoride can be produced with 2.17 mol of fluorine?



3. In the reaction of copper (II) oxide breaking down to form copper and oxygen, how much copper is produced if 0.663 moles of oxygen is given off?

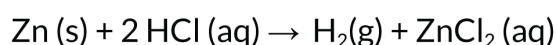


4. Fermentation is a complex chemical process of making wine by converting glucose into ethanol and carbon dioxide:



If 17.5 moles of ethanol were produced, how many moles of glucose were there initially?

5. Consider the reaction:



Calculate the moles of HCl needed to react completely with 8.25 moles of zinc.

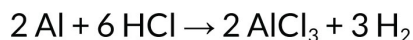
MOLE TO MOLE STOICHIOMETRY WORKSHEET

Name : _____

Date : _____

Answers

1. Using the equation



a. Find the number of moles of Al used to produce 9.9 moles of H₂.

$$9.9 \text{ mol H}_2 \times (2 \text{ mol Al} / 3 \text{ mol H}_2) = 6.6 \text{ mol H}_2$$

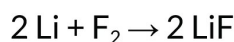
b. Find the number of moles of HCl used to produce 1.11 moles of AlCl₃.

$$1.1 \text{ mol AlCl}_3 \times (6 \text{ mol HCl} / 2 \text{ mol AlCl}_3) = 3.3 \text{ mol AlCl}_3$$

c. Find the number of moles of AlCl₃ produced along with 0.0757 moles of H₂.

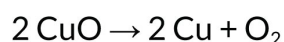
$$0.0757 \text{ mol H}_2 \times (2 \text{ mol AlCl}_3 / 3 \text{ mol H}_2) = 0.050 \text{ mol AlCl}_3$$

2. The reaction between lithium and fluorine produces lithium fluoride. How many moles of lithium fluoride can be produced with 2.17 mol of fluorine?



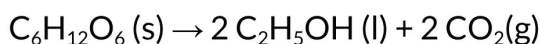
$$2.17 \text{ mol F}_2 \times (2 \text{ mol LiF} / 1 \text{ mol F}_2) = 4.34 \text{ mol LiF}$$

3. In the reaction of copper (II) oxide breaking down to form copper and oxygen, how much copper is produced if 0.663 moles of oxygen is given off?



$$0.663 \text{ mol O}_2 \times (2 \text{ mol Cu} / 1 \text{ mol O}_2) = 1.33 \text{ mol Cu}$$

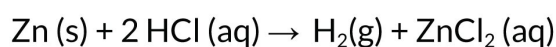
4. Fermentation is a complex chemical process of making wine by converting glucose into ethanol and carbon dioxide:



If 17.5 moles of ethanol were produced, how many moles of glucose were there initially?

$$17.5 \text{ mol C}_2\text{H}_5\text{OH} \times (1 \text{ mol C}_6\text{H}_{12}\text{O}_6 / 2 \text{ mol C}_2\text{H}_5\text{OH}) = 8.75 \text{ mol C}_6\text{H}_{12}\text{O}_6$$

5. Consider the reaction:



Calculate the moles of HCl needed to react completely with 8.25 moles of zinc.

$$8.25 \text{ mol Zn} \times (2 \text{ mol HCl} / 1 \text{ mol Zn}) = 16.5 \text{ mol HCl}$$