

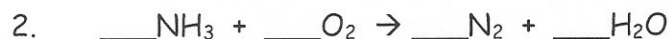
Answer each of the following questions using the equation provided. BE SURE TO BALANCE EACH EQUATION BEFORE SOLVING ANY PROBLEMS. SHOW ALL WORK.



a. 2 moles of NO will react with \_\_\_\_\_ mole(s) of O<sub>2</sub> to produce \_\_\_\_\_ mole(s) of NO<sub>2</sub>.

b. ? moles NO<sub>2</sub> = 3.6 moles O<sub>2</sub> ×  $\frac{\text{moles NO}_2}{\text{moles O}_2} =$  \_\_\_\_\_

c. How many moles of NO must react to form 4.67 moles of NO<sub>2</sub>?

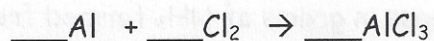


a. 20 moles of NH<sub>3</sub> are needed to produce \_\_\_\_\_ moles of H<sub>2</sub>O.

b. How many moles of N<sub>2</sub> will be produced if 3.5 moles of O<sub>2</sub> react?

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1. In a reaction between the elements aluminum and chlorine, aluminum chloride is produced.



- a. 2 moles of Al will react with \_\_\_\_\_ mole(s) of  $\text{Cl}_2$  to produce \_\_\_\_\_ mole(s) of  $\text{AlCl}_3$ .
- b. How many grams of  $\text{AlCl}_3$  will be produced if 2.50 moles of Al react?
- c. How many moles of  $\text{Cl}_2$  must react to produce 12.3 g of  $\text{AlCl}_3$ ?
- d. How many grams of aluminum will react with 3.4 moles of chlorine?
- e. If 17 grams of aluminum react, how many moles of aluminum chloride will be produced?

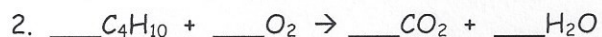
**Worksheet: Mixed Problems—Mole/Mole  
and Mole/Mass**

Name \_\_\_\_\_

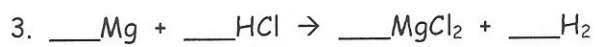
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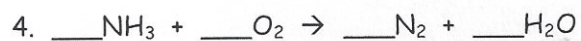
- If 101 grams of copper is used, how many moles of copper (II) oxide will be formed?
- If 5.25 moles of copper are used, how many moles of oxygen must also be used?
- If 78.2 grams of oxygen react with copper, how many moles of copper (II) oxide will be produced?



- How many moles of butane,  $\text{C}_4\text{H}_{10}$ , are needed to react with 5.5 moles of oxygen?
- How many grams of carbon dioxide will be produced if 3.5 moles of  $\text{O}_2$  react?



- What mass of HCl is consumed by the reaction of 2.50 moles of magnesium?
- What mass of MgCl<sub>2</sub> is produced if 3.67 moles of HCl react?
- How many moles of hydrogen gas are produced when 3.0 moles of magnesium react?



- How many moles of oxygen react with 0.23 moles of NH<sub>3</sub>?
- How many grams of water will be produced if 0.55 moles of oxygen react?
- How many moles of nitrogen gas will be produced if 12.6 grams of ammonia react?