

## Unit 6D Mole to Mole Calculations

Name:

Date:

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

1. \_\_\_\_NO +\_\_\_\_O
$$_2$$
  $\rightarrow$ \_\_\_\_NO $_2$ 

a. 2 moles of NO will react with 
$$\underline{\phantom{a}}$$
 mole(s) of  $O_2$  to produce  $\underline{\phantom{a}}$  mole(s) of  $NO_2$ .

b. ? moles 
$$NO_2 = 3.6$$
 moles  $O_2 \times \frac{\text{moles } NO_2}{\text{moles } O_2} = \frac{1}{100}$ 

c. How many moles of NO must react to form 4.67 moles of NO,?

2. \_\_\_\_NH<sub>3</sub> + \_\_\_\_0
$$_2$$
  $\rightarrow$  \_\_\_\_N<sub>2</sub> + \_\_\_\_H<sub>2</sub>0

a. 20 moles of  $NH_3$  are needed to produce \_\_\_\_\_ moles of  $H_2O$ .

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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- 3. \_\_\_\_AIF<sub>3</sub> + \_\_\_\_O<sub>2</sub>  $\rightarrow$  \_\_\_AI<sub>2</sub>O<sub>3</sub> + \_\_\_\_F<sub>2</sub>
  - a. 20 moles of AIF<sub>3</sub> will produce \_\_\_\_\_ moles of F<sub>2</sub>.
  - b. \_\_\_\_\_ moles of AIF, will react with 0.6 moles of O<sub>2</sub>.

- 4.  $C_3H_8 + C_2 \rightarrow C_2 + H_2O$ 
  - a. How many moles of oxygen react with 11 moles of C<sub>3</sub>H<sub>8</sub>?
  - b. How many moles of  ${\rm CO_2}$  are produced if 3.5 moles of water are produced?

- 5. \_\_\_\_\_0, + \_\_\_\_Fe  $\rightarrow$  \_\_\_\_Fe,0,
  - a. Fill in the following word equation \_\_\_\_\_ moles of oxygen gas react with \_\_\_\_\_ moles of iron to produce \_\_\_\_\_ moles of iron (III) oxide.
  - b. \_\_\_\_\_ moles of  $\mathbf{0}_2$  are required to produce 3.0 moles of iron (III) oxide.