$\qquad$

## Stoichiometry

## Mole-to-Mole Conversions

1) How many moles of $\mathrm{HNO}_{3}$ will be produced when 0.51 mol of $\mathrm{N}_{2} \mathrm{O}_{5}$ reacts?

$$
\mathrm{N}_{2} \mathrm{O}_{5}+\mathrm{H}_{2} \mathrm{O} \rightarrow 2 \mathrm{HNO}_{3}
$$

### 1.02 mol

2) How many moles of NaBr will be produced when 0.69 mol of bromine $\left(\mathrm{Br}_{2}\right)$ reacts according to the following equation: $\quad \mathrm{Br}_{2}+2 \mathrm{NaI} \rightarrow 2 \mathrm{NaBr}+\mathrm{I}_{2}$
1.38 mol

## Mixture of Mass and Volume Conversions

3) How many liters of oxygen would be required to react completely with 250.0 L of hydrogen gas?

$$
2 \mathrm{H}_{2(\mathrm{~g})}+\mathrm{O}_{2(\mathrm{~g})} \rightarrow 2 \mathrm{H}_{2} \mathrm{O}_{(\mathrm{g})}
$$

125 L
4) If 2.50 g silver reacts in the following equation, how many grams of $\mathrm{HNO}_{3}$ will be used up?

$$
\mathrm{Ag}+2 \mathrm{HNO}_{3} \rightarrow \mathrm{NO}_{2}+\mathrm{AgNO}_{3}+\mathrm{H}_{2} \mathrm{O}
$$

$$
2.92 \mathrm{~g}
$$

5) What mass of carbon monoxide must react with oxygen to produce 0.69 g of carbon dioxide? (Write a balanced equation first!)

$$
\begin{gathered}
2 \mathrm{CO}+\mathrm{O}_{2} \rightarrow 2 \mathrm{CO}_{2} \\
0.44 \mathrm{~g}
\end{gathered}
$$

6) Calculate the volume in liters of oxygen gas required to react with 50.0 g of aluminum at STP.

$$
4 \mathrm{Al}+3 \mathrm{O}_{2} \rightarrow 2 \mathrm{Al}_{2} \mathrm{O}_{3}
$$

