

For the following chemical reactions, complete the chart and perform the following conversions

Chemical Equation	$4\text{Al} + 3\text{O}_2 \rightarrow 2\text{Al}_2\text{O}_3$
Molar Ratio	$4 \text{ mol Al} = 3 \text{ mol O}_2 = 2 \text{ mol Al}_2\text{O}_3$

Convert <u>7.23 mol Al</u> to mol <u>Al<sub>2</sub>O<sub>3</sub></u>	Convert <u>5.09 mol Al<sub>2</sub>O<sub>3</sub></u> to mol <u>O<sub>2</sub></u>
$7.23 \text{ mol Al} \times \frac{2 \text{ mol Al}_2\text{O}_3}{4 \text{ mol Al}} = 3.615 \text{ mol Al}_2\text{O}_3$	$5.09 \text{ mol Al}_2\text{O}_3 \times \frac{3 \text{ mol O}_2}{2 \text{ mol Al}_2\text{O}_3} = 7.635 \text{ mol O}_2$
mol Al <sub>2</sub> O <sub>3</sub>	mol O <sub>2</sub>

$$\frac{7.23 \times 2}{4} = 3.615$$

Round to 2 after

$$\frac{5.09 \times 3}{2} = 7.635$$

Round to 2 after

Chemical Equation	$1\text{Fe}(\text{BrO}_3)_2 \rightarrow 1\text{Fe} + 2\text{BrO}_3$
Molar Ratio	$1 \text{ mol Fe}(\text{BrO}_3)_2 = 1 \text{ mol Fe} = 2 \text{ mol BrO}_3$

Convert 2.70 mol Fe(BrO <sub>3</sub> ) <sub>2</sub> to mol BrO <sub>3</sub>	
mol BrO <sub>3</sub>	

Convert 8.02 mol Fe to mol Fe(BrO <sub>3</sub> ) <sub>2</sub>	
mol Fe(BrO <sub>3</sub> ) <sub>2</sub>	

Convert 0.76 mol Fe to mol BrO <sub>3</sub>	
mol BrO <sub>3</sub>	

Convert 2.49 mol BrO <sub>3</sub> to mol Fe(BrO <sub>3</sub> ) <sub>2</sub>	
mol Fe(BrO <sub>3</sub> ) <sub>2</sub>	

Chemical Equation	$2\text{Ag} + \text{Ca}(\text{ClO}_3)_2 \rightarrow \text{Ca} + 2\text{AgClO}_3$			
Molar Ratio	$\frac{\text{mol Ag}}{\text{mol } \text{Ca}(\text{ClO}_3)_2} =$	$\frac{\text{mol Ca}}{\text{mol } \text{Ca}(\text{ClO}_3)_2} =$	$\frac{\text{mol AgClO}_3}{\text{mol } \text{Ca}(\text{ClO}_3)_2} =$	$\frac{\text{mol AgClO}_3}{\text{mol Ag}}$
Convert 1.52mol Ag to mol Ca		Convert 1.74mol AgClO <sub>3</sub> to mol Ca(ClO <sub>3</sub> ) <sub>2</sub>		
mol Ca		mol Ca(ClO <sub>3</sub> ) <sub>2</sub>		

Chemical Equation	$3\text{H}_2\text{SO}_4 + 2\text{V}(\text{OH})_3 \rightarrow 6\text{HOH} + \text{V}_2(\text{SO}_4)_3$			
Molar Ratio	$\frac{\text{mol H}_2\text{SO}_4}{\text{mol } \text{V}(\text{OH})_3} =$	$\frac{\text{mol V}_2(\text{SO}_4)_3}{\text{mol } \text{V}(\text{OH})_3} =$	$\frac{\text{mol HOH}}{\text{mol } \text{V}(\text{OH})_3} =$	$\frac{\text{mol HOH}}{\text{mol } \text{V}_2(\text{SO}_4)_3}$
Convert 6.00mol V(OH) <sub>3</sub> to mol HOH		Convert 2.87mol V <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub> to mol H <sub>2</sub> SO <sub>4</sub>		
mol HOH		mol H <sub>2</sub> SO <sub>4</sub>		