

# Learning Target 8.0

Name: KE

## 1) Mole-Mole Problems

### Beginning Stoichiometry

1. Lead will react with hydrochloric acid to produce lead (II) chloride and hydrogen. How many moles of hydrochloric acid are needed to completely react with 0.36 mole of lead?



0.36 mol Pb	2 mol HCl	= 0.72 mol HCl
1 mol Pb		

2. How many moles of HNO<sub>3</sub> will be produced when 0.51 mole of N<sub>2</sub>O<sub>5</sub> reacts according to the following equation?



0.51 mol N <sub>2</sub> O <sub>5</sub>	2 mol HNO <sub>3</sub>	= 1.02 mol HNO <sub>3</sub>
1 mol N <sub>2</sub> O <sub>5</sub>		

3. Carbon will react with Zinc Oxide to produce Zinc and Carbon dioxide. How many moles of Carbon-dioxide will be produced if 0.38 mole of ZnO is completely reacted?



0.38 mol ZnO	1 mol CO <sub>2</sub>	= 0.19 mol CO <sub>2</sub>
2 mol ZnO		

4. How many moles of NaBr will be produced when 0.69 mol of bromine reacts according to the following equation?



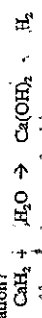
0.69 mol Br <sub>2</sub>	2 mol NaBr	= 0.69 mol NaBr
1 mol Br <sub>2</sub>		

5. Phosphorus will react with bromine to produce phosphorus tribromide. How many moles of phosphorus tribromide will be produced if 0.78 mol of bromine is reacted?



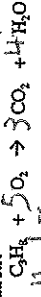
0.78 mol Br <sub>2</sub>	3 mol PBr <sub>3</sub>	= 0.52 mol PBr <sub>3</sub>
3 mol Br <sub>2</sub>		

6. How many moles of hydrogen will be produced if 0.44 mol of CaH<sub>2</sub> reacts according to the following equation?



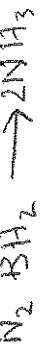
0.44 mol CaH <sub>2</sub>	1 mol H <sub>2</sub>	= 0.44 mol H <sub>2</sub>
1 mol CaH <sub>2</sub>		

7. How many moles of Oxygen will be needed to react with 0.38 mol of C<sub>3</sub>H<sub>8</sub> according to the following equation?



0.38 mol C <sub>3</sub> H <sub>8</sub>	5 mol O <sub>2</sub>	= 1.9 mol O <sub>2</sub>
1 mol C <sub>3</sub> H <sub>8</sub>		

8. Nitrogen can react with hydrogen to produce ammonia. How many moles of nitrogen will be needed to produce 0.48 mol of NH<sub>3</sub>?



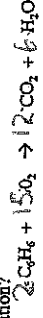
0.48 mol NH <sub>3</sub>	1 mol N <sub>2</sub>	= 0.24 mol N <sub>2</sub>
2 mol NH <sub>3</sub>		

9. Iron will react with oxygen to produce Fe<sub>2</sub>O<sub>3</sub>. How many moles of Fe<sub>2</sub>O<sub>3</sub> will be produced if 0.18 mol of Fe reacts?



0.18 mol Fe	1 mol Fe <sub>2</sub> O <sub>3</sub>	= 0.09 mol Fe <sub>2</sub> O <sub>3</sub>
2 mol Fe		

10. How many moles of water will be produced if 2.35 mol of oxygen reacts according to the following equation?



2.35 mol O <sub>2</sub>	6 mol H <sub>2</sub> O	= 0.94 mol H <sub>2</sub> O
15 mol O <sub>2</sub>		