Stoichiometry Worksheet 1

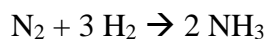## Mole to Mole calculations

Example Problem: | $2NH_4NO_3 \longrightarrow 2N_2 + 4H_2O + O_2$ |

1. How many moles of water are produced if 15.0 moles of oxygen are produced in the reaction?

2. How many moles of nitrogen gas are produced in the reaction if we started with 6 moles of ammonium nitrate?

Assignment: | $N_2 + 3 H_2 \rightarrow 2 NH_3$ |

1. If we have 3 moles of N_2, how many moles of NH_3 will be produced?

2. Suppose 5.00 moles of H_2 reacted with nitrogen. How many moles of ammonia (NH_3) would be produced?

3. If we want to produce 6.25 moles of ammonia (NH_3), How many moles of nitrogen (N_2) would be required?

Mass to Mole calculations

Example problem: $Zn + 2HCl \rightarrow ZnCl_2 + H_2$

1. How many moles of Zinc are required to produce 20g of zinc chloride?

2. How many moles of hydrogen gas are produced if 38.3g of hydrochloric acid are used?

Assignment: $2\ NaClO_3 \rightarrow 2\ NaCl + 3\ O_2$
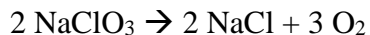
1. 2.50g of sodium chlorate ($NaClO_3$) decomposes. How many moles of oxygen will be produced?

2. When sodium chlorate ($NaClO_3$) decomposes, 38g of sodium chloride (NaCl) is formed. How many moles of oxygen (O_2) are also formed?

3. We need 35g of oxygen (O_2) for an experiment. How many moles of sodium chlorate ($NaClO_3$) are needed?