

• DO YOUR OWN WORK!!

• YOU MUST SHOW ALL WORK FOR ANY CREDIT

• PAPERS COLLECTED AT END OF PERIOD

- Iron (III) oxide is formed when solid iron reacts with atmospheric oxygen gas. $4 \text{ Fe} + 3 \text{ O}_2 \rightarrow 2 \text{ Fe}_2\text{O}_3$
 - How many moles of iron are required if 6.2 moles of oxygen are present? **[8.27 mol Fe]**
 - How many moles of oxygen will be needed to produce 5.6 moles of iron (III) oxide?
 - What mass of oxygen is needed to react with 7.5 moles of solid iron? **[180g O₂]**
 - What mass of iron (III) oxide will be produced if 82g of iron are added to the reaction?
- Aluminum and chlorine gas react to form aluminum chloride. $2 \text{ Al} + 3 \text{ Cl}_2 \rightarrow 2 \text{ AlCl}_3$
 - How many grams of aluminum will be needed to form 54g of AlCl₃? **[10.90 g Al]**
 - If 68g of aluminum is reacting, how many liters of Cl₂ will also need to react? **[84.97L Cl₂]**
 - How many molecules of AlCl₃ will be formed if 100g of Cl₂ react?
- Iron (III) chloride and tin (II) chloride react to form iron (II) chloride and tin (IV) chloride. $2 \text{ FeCl}_3 + \text{ SnCl}_2 \rightarrow 2 \text{ FeCl}_2 + \text{ SnCl}_4$
 - If 2.3 moles of tin (II) chloride react, how many grams of iron (III) chloride will be required? **[746.12 g FeCl₃]**
 - How many grams of tin (IV) chloride will be formed when 8.2×10^{24} molecules of iron (II) chloride react?
 - If 364 g of iron (III) chloride react with 240g of tin (II) chloride:
 - what is the limiting reagent?
 - how many grams of FeCl₂ will be formed? **[283.8 g FeCl₂]**
- Hydrochloric acid and sodium sulfate react to form sodium chloride and sulfuric acid, H₂SO₄. $2 \text{ HCl} + \text{ Na}_2\text{SO}_4 \rightarrow 2 \text{ NaCl} + \text{ H}_2\text{SO}_4$
 - How many grams of sulfuric acid will be formed if 120g of sodium sulfate reacts?
 - If 140g of hydrochloric acid and 190g of sodium sulfate are reacted, how many grams of sodium chloride will be formed? **[155.45g NaCl]**