

**Exam #2 Review Questions****CHUNK #1**

1	Ammonia (NH <sub>3</sub> ) is the active ingredient in many kitchen cleansers. How many atoms are in 3.40 grams of ammonia?
2	Copper(II) chloride reacts w/sodium nitrate to produce copper(II) nitrate and sodium chloride. If 20.0 g of copper(II) chloride react with sodium nitrate, what mass of sodium chloride is formed?
3	Hydrogen sulfide, given off by decaying organic matter, is converted to sulfur dioxide in the atmosphere by the reaction: $2 \text{H}_2\text{S}(\text{g}) + 3 \text{O}_2(\text{g}) \rightarrow 2 \text{SO}_2(\text{g}) + 2 \text{H}_2\text{O}(\text{l})$ How many moles of H <sub>2</sub> S are required to form 8.20 moles of SO <sub>2</sub> ?
4	Hydrogen sulfide, given off by decaying organic matter, is converted to sulfur dioxide in the atmosphere by the reaction: $2 \text{H}_2\text{S}(\text{g}) + 3 \text{O}_2(\text{g}) \rightarrow 2 \text{SO}_2(\text{g}) + 2 \text{H}_2\text{O}(\text{l})$ How many grams of water are produced from 6.82 g H <sub>2</sub> S?
5	Copper(II) chloride reacts w/sodium nitrate to produce copper(II) nitrate and sodium chloride. If 20.0 g of copper(II) chloride react with sodium nitrate, how many molecules of copper (II) nitrate are produced
6	How many grams does 0.500 moles of CuBr weigh?
7	How many moles of oxygen are made if 12.0 moles of potassium chlorate react? $2 \text{KClO}_3 \rightarrow 2 \text{KCl} + 3 \text{O}_2$
8	How many grams of potassium chloride are produced from 2.50 g of potassium and excess chlorine? $2 \text{K} + \text{Cl}_2 \rightarrow 2 \text{KCl}$
9	How many grams of oxygen are produced in the decomposition of 5.00 grams of potassium chlorate? $\text{KClO}_3 \rightarrow \text{KCl} + \text{O}_2$
10	Using the following equation: $\text{Pb}(\text{SO}_4)_2 + 4 \text{LiNO}_3 \rightarrow \text{Pb}(\text{NO}_3)_4 + 2 \text{Li}_2\text{SO}_4$ How many grams of lithium nitrate will be needed to make 250 grams of lithium sulfate, assuming that you have an adequate amount of lead (IV) sulfate to do the reaction?
11	$\text{Fe} + \text{HCl} \rightarrow \text{FeCl}_3 + \text{H}_2$ How many molecules of Fe is required to generate 6 moles of H <sub>2</sub> gas?
12	If 7.0 moles of HCl is added to enough iron that the HCl is completely used up, how much hydrogen gas will be produced? $\text{Fe} + \text{HCl} \rightarrow \text{FeCl}_3 + \text{H}_2$
13	$\text{Li}_2\text{CO}_3 \rightarrow \text{Li}_2\text{O} + \text{CO}_2$ In order to produce 2 moles of carbon dioxide gas, how many grams of lithium carbonate is required?
14	$\text{Na}_2\text{O} + \text{CO}_2 \rightarrow \text{Na}_2\text{CO}_3$ In order to produce 7 moles of Na <sub>2</sub> CO <sub>3</sub> , how many molecules of Na <sub>2</sub> O is required?
15	$\text{Ca}(\text{OH})_2 + \text{H}_3\text{PO}_4 \rightarrow \text{Ca}_3(\text{PO}_4)_2 + \text{H}_2\text{O}$ How many grams of Ca(OH) <sub>2</sub> is required to generate 9 moles of H <sub>2</sub> O?
16	$\text{Cr}_2(\text{SO}_3)_3(\text{s}) + \text{H}_2\text{SO}_4(\text{aq}) \rightarrow \text{Cr}_2(\text{SO}_4)_3(\text{aq}) + \text{SO}_2(\text{g}) + \text{H}_2\text{O}(\text{l})$ If $1.800 \times 10^{24}$ molecules of Cr <sub>2</sub> (SO <sub>3</sub> ) <sub>3</sub> reacts completely, what mass of water will be produced?
17	$\text{Cr}_2(\text{SO}_3)_3(\text{s}) + \text{H}_2\text{SO}_4(\text{aq}) \rightarrow \text{Cr}_2(\text{SO}_4)_3(\text{aq}) + \text{SO}_2(\text{g}) + \text{H}_2\text{O}(\text{l})$ If 30.00 g of Cr <sub>2</sub> (SO <sub>3</sub> ) <sub>3</sub> reacts completely, what number of molecules of H <sub>2</sub> SO <sub>4</sub> is required?
18	If 25.0 g of iron(III) phosphate react with excess sodium sulfate, how many grams of iron(III) sulfate can be made? $2 \text{FePO}_4 + 3 \text{Na}_2\text{SO}_4 \rightarrow \text{Fe}_2(\text{SO}_4)_3 + 2 \text{Na}_3\text{PO}_4$