

Name \_\_\_\_\_ Period \_\_\_\_\_

College Prep Chemistry of the Earth

Assignment 6J – Unit 6 Review

20 Points

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

Chemical Equation	$\text{Ti}(\text{SO}_4)_2 + 2\text{Cl}_2 \rightarrow \text{TiCl}_4 + 2\text{SO}_4$			
Molar Ratio	mol $\text{TiSO}_4 =$	mol $\text{Cl}_2 =$	mol $\text{TiCl}_4 =$	mol $\text{SO}_4 =$

Convert 2.74mol $\text{Ti}(\text{SO}_4)_2$ to mol $\text{TiCl}_4$		Convert 8.28mol $\text{Cl}_2$ to mol $\text{SO}_4$	
mol $\text{TiCl}_4 =$		mol $\text{SO}_4 =$	

Element	#	Molar Mass	Element	#	Molar Mass
Titanium (Ti)			Titanium (Ti)		
Sulfur (S)			Chlorine (Cl)		
Oxygen (O)			Titanium(IV)Chloride $\text{TiCl}_4$		
Titanium(IV)Sulfate $\text{Ti}(\text{SO}_4)_2$					

Convert 482.58g $\text{TiCl}_4$ to mol $\text{TiCl}_4$		Convert ___ mol $\text{TiCl}_4$ to mol $\text{SO}_4$	
mol $\text{TiCl}_4 =$		mol $\text{SO}_4 =$	

Convert 3.27mol $\text{Ti}(\text{SO}_4)_2$ to mol $\text{Cl}_2$		Convert ___ mol $\text{Cl}_2$ to volume $\text{Cl}_2$	
mol $\text{Cl}_2 =$		volume $\text{Cl}_2 =$	

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

Chemical Equation	$2\text{Mn}(\text{BrO}_3)_3 + 3\text{H}_2\text{S} \rightarrow \text{Mn}_2\text{S}_3 + 6\text{HBrO}_3$			
Molar Ratio	mol $\text{Mn}(\text{BrO}_3)_3 =$	mol $\text{H}_2\text{S} =$	mol $\text{Mn}_2\text{S}_3 =$	mol $\text{HBrO}_3$

MM $\text{Mn}(\text{BrO}_3)_3$	438.64g/mol
MM $\text{H}_2\text{S}$	34.09g/mol

MM $\text{Mn}_2\text{S}_3$	206.09g/mol
MM $\text{HBrO}_3$	128.91g/mol

Convert 374.53g $\text{Mn}(\text{BrO}_3)_3$ to mol $\text{Mn}(\text{BrO}_3)_3$	
mol $\text{Mn}(\text{BrO}_3)_3 =$	

Convert ___ mol $\text{Mn}(\text{BrO}_3)_3$ to mol $\text{HBrO}_3$	
mol $\text{HBrO}_3 =$	

Convert ___ mol $\text{HBrO}_3$ to mass $\text{HBrO}_3$	
mass $\text{HBrO}_3 =$	

Convert 57.29L $\text{H}_2\text{S}$ to mol $\text{H}_2\text{S}$	
mol $\text{H}_2\text{S} =$	

Convert ___ mol $\text{H}_2\text{S}$ to mol $\text{Mn}_2\text{S}_3$	
mol $\text{Mn}_2\text{S}_3 =$	

Convert mol $\text{Mn}_2\text{S}_3$ to mass $\text{Mn}_2\text{S}_3$	
mass $\text{Mn}_2\text{S}_3 =$	