

Name _____ Period _____

College Prep Chemistry of the Earth

Assignment 6O – Unit 6 Review

30 Points

For the following atomic isotopes complete the chart below

Isotope	Manganese-53	Manganese-54	Manganese-55
Atomic Mass (amu)			
Molar Mass (g/mol)			
Avg Atomic Mass (g/mol, periodic table)			

For the following ionic compounds or molecules, calculate the molar mass using the chart below

Titanium(IV) Oxide [TiO ₂]		
Element	#	Molar Mass
Titanium [Ti]		
Oxygen [O]		
Titanium Oxide [TiO ₂]		

Phosphoric Acid [H ₃ PO ₄]		
Element	#	Molar Mass
Hydrogen [H]		
Phosphate [PO ₄]		
Phosphoric Acid [H ₃ PO ₄]		

Copper(II)Phosphate [Cu ₃ (PO ₄) ₂]		
Element	#	Molar Mass
Copper [Cu]		
Phosphate [PO ₄]		
Copper(II)Phosphate [Cu ₃ (PO ₄) ₂]		

Tungsten(IV)Thiosulfate [W(S ₂ O ₃) ₃]		
Element	#	Molar Mass
Tungsten [W]		
Thiosulfate [S ₂ O ₃]		
Tungsten(IV)Thiosulfate [W(S ₂ O ₃) ₃]		

Complete the following molar mass conversions based on the molar mass charts above

Convert 90.5g W(S ₂ O ₃) ₃ to mol W(S ₂ O ₃) ₃	
mol W(S ₂ O ₃) ₃	

Convert 5.29mol TiO ₂ to mass TiO ₂	
mass TiO ₂	

Complete the following molar conversions based on the in class examples and problems

Chemical Equation	$\text{TiCl}_4 + 2\text{H}_2\text{O} \rightarrow \text{TiO}_2 + 4\text{HCl}$							
Molar Ratio								

Convert 283.5g TiO_2 to mol TiO_2				Convert ____ mol TiO_2 to mol H_2O			
mol TiO_2				mol H_2O			

Chemical Equation	$\text{H}_3\text{PO}_4 + \text{Cu}(\text{OH})_2 \rightarrow \text{HOH} + \text{Cu}_3(\text{PO}_4)_2$							
Molar Ratio								

Convert 381.4g H_3PO_4 to mol H_3PO_4				Convert ____ mol H_3PO_4 to mol $\text{Cu}_3(\text{PO}_4)_2$			
mol H_3PO_4				mol $\text{Cu}_3(\text{PO}_4)_2$			

Convert ____ mol $\text{Cu}_3(\text{PO}_4)_2$ to mass $\text{Cu}_3(\text{PO}_4)_2$			
mass $\text{Cu}_3(\text{PO}_4)_2$			

Convert the following volume measurements to mol, or mol to volume

Convert 59.2L SO ₂ (g) to mol SO ₂ (g)	
mol SO ₂ (g)	

Convert 1.35mol Br ₂ (g) to volume Br ₂ (g)	
volume Br ₂ (g)	

Chemical Equation	$\text{H}_2\text{CO}_3 + \text{NaOH(g)} \rightarrow \text{HOH(g)} + \text{Na}_2\text{CO}_3$							
Molar Ratio								

Convert 59.3L NaOH(g) to mol NaOH(g)	
mol NaOH(g)	

Convert ____ mol NaOH(g) to mol HOH(g)	
mol HOH(g)	

Convert ____ mol HOH(g) to volume HOH(g)	

Volume HOH(g)	
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