

Name _____ Period _____

College Prep Chemistry of the Earth

Assignment 6I – Triple Stoichiometry Conversions with Volume (Part 3)

20 Points

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

Chemical Equation	$2\text{H}_3\text{PO}_4 + 3\text{Cl}_2 \rightarrow 6\text{HCl} + 2\text{PO}_4$			
Molar Ratio	mol H_3PO_4 =	mol Cl_2 =	mol HCl =	mol PO_4

MM H_3PO_4	98.00g/mol
MM Cl_2	70.90g/mol

MM HCl	36.46g/mol
MM PO_4	94.97g/mol

Convert 48.38L Cl_2 to mol Cl_2	
mol Cl_2 =	

Convert mol Cl_2 to mol PO_4	
mol PO_4 =	

Convert mol PO_4 to volume PO_4	
volume PO_4 =	

Convert 274.29g H_3PO_4 to mol H_3PO_4	
mol H_3PO_4 =	

Convert mol H_3PO_4 to mol Cl_2	
mol Cl_2 =	

Convert mol Cl_2 to volume Cl_2	
volume Cl_2 =	

Chemical Equation	$2\text{Al}_2\text{O}_3 \rightarrow 4\text{Al} + 3\text{O}_2$		
Molar Ratio	mol Al_2O_3 =	mol Al =	mol O_2 =

MM Al_2O_3	128.94g/mol	MM O_2	32.00g/mol
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Volume (L)
1 mol = 22.4 L

Convert 32.84L O_2 to mol O_2	
32.84 L O_2	1 mol O_2
	22.4 L O_2
mol O_2 =	mol O_2

Convert mol O_2 to mol Al_2O_3	
mol Al_2O_3 =	

Mass (g)
1 mol = MM(g)

Convert mol Al_2O_3 to mass Al_2O_3	
mol Al_2O_3	check above g Al_2O_3
	1 mol Al_2O_3
mass Al_2O_3 =	g Al_2O_3

Convert 84.39g Al to mol Al	
84.39 g Al	1 mol Al
	26.98 g Al
mol Al =	mol Al

Convert mol Al to mol Al_2O_3	
mol Al_2O_3 =	

Convert mol Al_2O_3 to mass Al_2O_3	
mass Al_2O_3 =	