

Name _____ Period _____

College Prep Chemistry of the Earth

Assignment 6J – *Daltons Law of Partial Pressures*

30 Points

Complete the following problems based on the ideal gas law

<i>Ideal Gas Law Forms</i>	$P = \frac{nRT}{V}$	$V = \frac{nRT}{P}$	$n = \frac{PV}{RT}$	$T = \frac{PV}{nR}$
$PV = nRT$				

<i>Ideal Gas Constant [R]</i>	$R = 0.0821 \frac{\text{L} \cdot \text{atm}}{\text{mol} \cdot \text{K}}$	<i>Dalton Law</i>	$P_{\text{Total}} = P_1 + P_2 + P_3$	$P_1 = P_{\text{Total}} - P_2 - P_3$
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$P_{\text{H}_2} = 2.48\text{atm}, P_{\text{CO}_2} = 1.28\text{atm}$ $P_{\text{N}_2} = 5.45\text{atm}, P_{\text{Total}} = \underline{\hspace{1cm}}\text{atm}$

$P_{\text{Total}} =$	
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$P_{\text{Total}} =$	
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$P_{\text{O}_2} = 7.27\text{atm}, P_{\text{N}_2} = 6.54\text{atm}$ $P_{\text{CO}} = 1.41\text{atm}, P_{\text{Total}} = \underline{\hspace{1cm}}\text{atm}$

$P_{\text{Total}} =$	
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$P_{\text{Total}} =$	
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$P_{\text{HCN}} = 2.15\text{atm}, P_{\text{N}_2} = 8.17\text{atm}$ $P_{\text{O}_2} = 1.14\text{atm}, P_{\text{Total}} = \underline{\hspace{1cm}}\text{atm}$
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$P_{\text{Total}} =$	
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$P_{\text{Total}} =$	
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$P_{\text{Cl}_2} = 9.46\text{atm}, P_{\text{H}_2} = 3.01\text{atm}$ $P_{\text{Br}_2} = 2.53\text{atm}, P_{\text{Total}} = \underline{\hspace{1cm}}\text{atm}$
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$P_{\text{Total}} =$	
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$P_{\text{Total}} =$	
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$P_{\text{Total}} = \underline{\hspace{1cm}}\text{atm}, V = 40.66\text{L}$ $n = 9.03\text{mol}, T = \underline{\hspace{1cm}}\text{K}$
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$T =$	
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$T =$	
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$P_{\text{Total}} = \underline{\hspace{1cm}}\text{atm}, V = \underline{\hspace{1cm}}\text{L}$ $n = 3.67\text{mol}, T = 406.61\text{K}$

$V =$	
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$V =$	
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$P_{\text{Total}} = \underline{\hspace{1cm}}\text{atm}, V = 32.45\text{L}$ $n = 1.58\text{mol}, T = \underline{\hspace{1cm}}\text{K}$
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$T =$	
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$T =$	
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$P_{\text{Total}} = \underline{\hspace{1cm}}\text{atm}, V = 20.34\text{L}$ $n = \underline{\hspace{1cm}}\text{mol}, T = 213.53\text{K}$
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$n =$	
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$n =$	
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$$P_{F_2} = 14.28 \text{ atm}, P_{H_2} = 8.28 \text{ atm}$$

$$P_{Cl_2} = 4.37 \text{ atm}, P_{Total} = \text{ ______ atm}$$

$P_{Total} =$		

$P_{Total} =$		
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$$P_{O_2} = \text{ ______ atm}, V = 55.36 \text{ L}$$

$$n = 1.72 \text{ mol}, T = 553.6 \text{ K}$$

$P_{O_2} =$		

$P_{O_2} =$		
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$$P_{N_2} = \text{ ______ atm}, V = 66.26 \text{ L}$$

$$n = 2.01 \text{ mol}, T = 742.99 \text{ K}$$

$P_{N_2} =$		

$P_{N_2} =$		
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$$P_{CO_2} = \text{ ______ atm}, V = 81.74 \text{ L}$$

$$n = 3.41 \text{ mol}, T = 274.84 \text{ K}$$

$P_{CO_2} =$		

$P_{CO_2} =$		
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$$P_{SO_2} = \text{ ______ atm}, V = 141.47 \text{ L}$$

$$n = 2.05 \text{ mol}, T = 295.24 \text{ K}$$

$P_{SO_2} =$		

$P_{SO_2} =$		
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$$P_{Total} = \text{ ______ atm}, V = \text{ ______ L}$$

$$n = 1.53 \text{ mol}, T = 357.52 \text{ K}$$

$V =$		

$V =$		
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$$P_{O_2} = \text{ ______ atm}, P_{SO_2} = 2.50 \text{ atm}$$

$$P_{N_2} = 3.58 \text{ atm}, P_{Total} = \text{ ______ atm}$$

$P_{Total} =$		

$P_{Total} =$		
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$$P_{N_2} = \text{ ______ atm}, P_{SO} = 4.52 \text{ atm}$$

$$P_{O_2} = 2.88 \text{ atm}, P_{Total} = \text{ ______ atm}$$

$P_{Total} =$		

$P_{Total} =$		
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$$P_{CO_2} = \text{ ______ atm}, P_{CO_2} = 4.72 \text{ atm}$$

$$P_{N_2} = 10.83 \text{ atm}, P_{Total} = \text{ ______ atm}$$

$P_{Total} =$		

$P_{Total} =$		
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$$P_{SO_2} = \text{ ______ atm}, P_{NO_2} = 4.39 \text{ atm}$$

$$P_{O_2} = 1.52 \text{ atm}, P_{Total} = \text{ ______ atm}$$

$P_{Total} =$		

$P_{Total} =$		
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