

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

College Prep Chemistry of the Earth

Assignment 70 – Daltons Law of Partial Pressures

30 Points

Complete the following problems based on the ideal gas law

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

Ideal Gas Constant [R]	$R = 0.0821 \frac{L \cdot atm}{mol \cdot K}$	Dalton Law	$P_{Total} = P_1 + P_2 + P_3$	$P_1 = P_{Total} - P_2 - P_3$
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$P_{H_2} = 2.48 atm, P_{CO_2} = 1.28 atm$   
 $P_{N_2} = 5.45 atm, P_{Total} = \underline{\hspace{2cm}} atm$

$P_{Total} =$  \_\_\_\_\_

$P_{Total} =$  \_\_\_\_\_

$P_{Total} = \underline{\hspace{2cm}} atm, V = 40.66 L$   
 $n = 9.03 mol, T = \underline{\hspace{2cm}} K$

$T =$  \_\_\_\_\_

$T =$  \_\_\_\_\_

$P_{O_2} = 7.27 atm, P_{N_2} = 6.54 atm$   
 $P_{CO} = 1.41 atm, P_{Total} = \underline{\hspace{2cm}} atm$

$P_{Total} =$  \_\_\_\_\_

$P_{Total} =$  \_\_\_\_\_

$P_{Total} = \underline{\hspace{2cm}} atm, V = \underline{\hspace{2cm}} L$   
 $n = 3.67 mol, T = 406.61 K$

$V =$  \_\_\_\_\_

$V =$  \_\_\_\_\_

$P_{HCN} = 2.15 atm, P_{N_2} = 8.17 atm$   
 $P_{O_2} = 1.14 atm, P_{Total} = \underline{\hspace{2cm}} atm$

$P_{Total} =$  \_\_\_\_\_

$P_{Total} =$  \_\_\_\_\_

$P_{Total} = \underline{\hspace{2cm}} atm, V = 32.45 L$   
 $n = 1.58 mol, T = \underline{\hspace{2cm}} K$

$T =$  \_\_\_\_\_

$T =$  \_\_\_\_\_

$P_{Cl_2} = 9.46 atm, P_{H_2} = 3.01 atm$   
 $P_{Br_2} = 2.53 atm, P_{Total} = \underline{\hspace{2cm}} atm$

$P_{Total} =$  \_\_\_\_\_

$P_{Total} =$  \_\_\_\_\_

$P_{Total} = \underline{\hspace{2cm}} atm, V = 20.34 L$   
 $n = \underline{\hspace{2cm}} mol, T = 213.53 K$

$n =$  \_\_\_\_\_

$n =$  \_\_\_\_\_

$P_{F_2} = 14.28\text{atm}$ ,  $P_{H_2} = 8.28\text{atm}$   
 $P_{Cl_2} = 4.37\text{atm}$ ,  $P_{Total} = \underline{\hspace{2cm}}\text{atm}$

$P_{Total} =$ 

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$P_{Total} =$ 

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$P_{O_2} = \underline{\hspace{2cm}}\text{atm}$ ,  $V = 55.36\text{L}$   
 $n = 1.72\text{mol}$ ,  $T = 553.6\text{K}$

$P_{O_2} =$ 

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$P_{O_2} =$ 

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$P_{N_2} = \underline{\hspace{2cm}}\text{atm}$ ,  $V = 66.26\text{L}$   
 $n = 2.01\text{mol}$ ,  $T = 742.99\text{K}$

$P_{N_2} =$ 

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$P_{N_2} =$ 

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$P_{CO_2} = \underline{\hspace{2cm}}\text{atm}$ ,  $V = 81.74\text{L}$   
 $n = 3.41\text{mol}$ ,  $T = 274.84\text{K}$

$P_{CO_2} =$ 

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$P_{CO_2} =$ 

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$P_{SO_2} = \underline{\hspace{2cm}}\text{atm}$ ,  $V = 141.47\text{L}$   
 $n = 2.05\text{mol}$ ,  $T = 295.24\text{K}$

$P_{SO_2} =$ 

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$P_{SO_2} =$ 

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$P_{Total} = \underline{\hspace{2cm}}\text{atm}$ ,  $V = \underline{\hspace{2cm}}\text{L}$   
 $n = 1.53\text{mol}$ ,  $T = 357.52\text{K}$

$V =$ 

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$V =$ 

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$P_{O_2} = \underline{\hspace{2cm}}\text{atm}$ ,  $P_{SO_2} = 2.50\text{atm}$   
 $P_{N_2} = 3.58\text{atm}$ ,  $P_{Total} = \underline{\hspace{2cm}}\text{atm}$

$P_{Total} =$ 

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$P_{Total} =$ 

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$P_{N_2} = \underline{\hspace{2cm}}\text{atm}$ ,  $P_{SO} = 4.52\text{atm}$   
 $P_{O_2} = 2.88\text{atm}$ ,  $P_{Total} = \underline{\hspace{2cm}}\text{atm}$

$P_{Total} =$ 

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$P_{Total} =$ 

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$P_{CO_2} = \underline{\hspace{2cm}}\text{atm}$ ,  $P_{CO_2} = 4.72\text{atm}$   
 $P_{N_2} = 10.83\text{atm}$ ,  $P_{Total} = \underline{\hspace{2cm}}\text{atm}$

$P_{Total} =$ 

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$P_{Total} =$ 

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$P_{SO_2} = \underline{\hspace{2cm}}\text{atm}$ ,  $P_{NO_2} = 4.39\text{atm}$   
 $P_{O_2} = 1.52\text{atm}$ ,  $P_{Total} = \underline{\hspace{2cm}}\text{atm}$

$P_{Total} =$ 

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$P_{Total} =$ 

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