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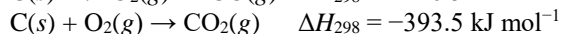
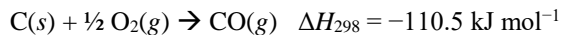
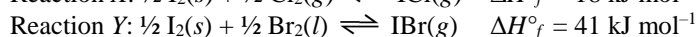
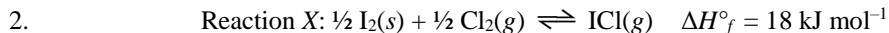
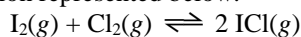
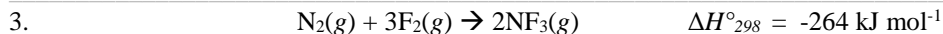
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**AP Chemistry - Chapters 5 & 6 – Quick Partner Quiz – 18 minutes**

Solve the following thermodynamics and gas laws problems You must show all work and use the proper number of significant figures.



The combustion of carbon monoxide is represented by the equation above.

(a) Determine the value of the standard enthalpy change,  $\Delta H_{rxn}$ , for the combustion of  $\text{CO}(g)$  at 298 K using the following information.(b) Calculate the value of  $\Delta H_{rxn}$  if 420.0 L of  $\text{O}_2$  are reacted with the correct stoichiometric amount of  $\text{CO}(g)$  at a pressure of 777 mm Hg at 30.0 °C.(a) For the vaporization of solid iodine,  $\text{I}_2(s) \rightarrow \text{I}_2(g)$ , the value of  $\Delta H_{298}^\circ$  is 62 kJ mol<sup>-1</sup>. Using this information, calculate the value of  $\Delta H_f^\circ$  for the reaction represented below.(b) In a completely separate experiment a rigid container is prepared which has equal moles of  $\text{ICl}(g)$  and  $\text{IBr}(g)$ . The rigid container develops a **pinhole leak**. If it takes 935 seconds for the  $\text{ICl}(g)$  to completely effuse, what is the rate of effusion of  $\text{IBr}(g)$ .(a) Calculate the standard enthalpy change,  $\Delta H^\circ$ , that occurs when a 0.456 mol sample of  $\text{NF}_3(g)$  is formed from  $\text{N}_2(g)$  and  $\text{F}_2(g)$  at 1.00 atm and 298 K.(b) Determine the root mean square velocity of  $\text{NF}_3(g)$  when a 0.456 mol sample of  $\text{NF}_3(g)$  is formed from  $\text{N}_2(g)$  and  $\text{F}_2(g)$  at 1.00 atm and 298 K.