

Question 1 (8 points): For the following laws below write the definition in a complete sentence as well as a mathematical formula

- A. Boyle's Law

- B. Charles's Law

- C. Avogadro's Law

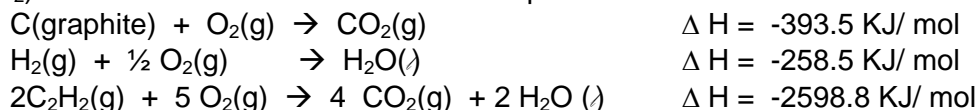
- D. Dalton's Law of Partial Pressure

Question 2: (2 points) Write the Thermochemical equation for the reaction with the correct Enthalpy of reaction
 $\text{CH}_4(\text{g}) + \text{Br}_2(\text{g}) \rightarrow \text{CH}_3\text{Br}(\text{g}) + \text{HBr}$

Given

Bond	Bond Enthalpy
H-Br	366.1 KJ/ mol
C-H	414 KJ/ mol
Br-Br	192.5 KJ/ mol
C-Br	276 KJ/ mol

Question 3: (3 points) given the following information, calculate the standard enthalpy of formation of acetylene (C_2H_2). Please write the Thermochemical equation



Question 4: (2 points) Quantities of 50.0 mL of 1.0 M HCl and 50.0 mL of 1.00 M NaOH are combined in a calorimeter. Both solutions are initially at 24.4 °C. Calculate the final temperature of the combined solution if the specific heat of the solution is 4.184 J/ g °C