**Name: Period: Seat#:**

**Worksheet #9**

**Directions:** Show all work in a way that would earn you credit on the AP Test! This is always the rule! Some answers are provided at the end in italics and underlined. If you need more space, use binder paper and staple to your worksheet.



1. In general, how do bond energies of single, double, and triple bond compare? Explain.
2. When chemical bonds break, energy is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. When chemical bonds form, energy is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
4. Find the enthalpy (∆H) for the unbalanced reactions that follow. Make sure to write the balanced eq. first, and draw Lewis Structures to help you determine the bonds broken/formed if you don’t know what it looks like off the top of your head!
   1. Combustion of methane (CH4) *-808 kJ/mol*
   2. Formation of water *-485 kJ/mol*
   3. Formation of hydrochloric acid *-184 kJ/mol*
   4. \_\_\_\_\_CH4 + \_\_\_\_\_Cl2 🡪 \_\_\_\_\_CH3Cl + \_\_\_\_\_HCl *-104 kJ/mol*
   5. \_\_\_\_\_CH4 + \_\_\_\_\_Cl2 🡪 \_\_\_\_\_CH2Cl2 + \_\_\_\_\_HCl *-19 kJ/mol*