Chem II – Bond Enthalpies II Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use the average bond enthalpy data above to calculate the enthalpy change, ∆H for questions 1 to 8. For each calculation show all the steps and final units. Express your answer using the correct number of significant figures. Since addition and subtraction is involved follow the decimal place rule. Each question is worth 3 points.

1. CH4(g) + 4 Cl2(g) → CCl4(g) + 4 HCl(g)

2. CH4(g) + 2 O2(g) → CO2(g) + 2 H2O(g)

3. CH4(g) + Cl2(g) → CH3Cl(g) + HCl(g)

4. H2(g) + Br2(g) → 2 HBr(g)

5. C2H6(g) + 3 ½ O2(g) → 2 CO2 (g) + 3 H2O(g)

6. C2H4(g) + 3 O2(g) → 2 CO2 (g) + 2 H2O(g)

7. C2H2(g) + 2 ½ O2(g) → 2 CO2 (g) + H2O(g)

8. 3 C(g) + 4 H2(g) → C3H8 (g)

