5.3 Study Worksheet KEY

1. Look it up!

2. They are average values, covalent bonds, for one mole in gaseous state.

3. Look it up! There are great tables showing the relationships in the textbook.

4. a. -460 kJ/mol b. -698 kJ/mol c. -115 kJ/mol d. -103 kJ/mol

e. -1194 kJ/mol f. -1076 kJ/mol g. -997 kJ/mol h. -2248 kJ/mol

5. Combustion reactions: B, E, F, G; Ethane is the best fuel as it releases more kJ of energy per mole.

6. Use your answers in number 3 to explain this specific example. Note: The number of electrons shared should play a role in your response.

7. Hint: Remember that bond enthalpies directly related to bond strengths!

8. 558 kJ/mol

9. -40 kJ/mol; reason for the difference should related to the assumptions we make when using bond enthalpies, and therefore the limitations of these enthalpies.

10. -76 kJ/mol

11. Your response should deal with resonance structures from topic 4/14.