Worksheet – Types of Bonds Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Identify the attractive forces associated with…
   1. Ionic Bonds:

Attractive electrostatic forces between negative charged ion and adjacent positively charged ion

* 1. Covalent Bonds:

Electrostatic forces between negatively charged electrons and adjacent positively charged nucleus

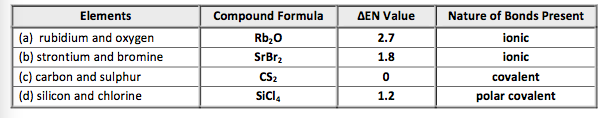
1. Identify two similarities between ionic and covalent bonds

* Both involve valence electron clouds
* Both involve electrostatic attractions between oppositely charged species
* The formation of bond bonds begins with the valence electrons of two atoms experiencing the attractive force of adjacent positive nuclei
* Both Ionic and Covalent bonds are strong

1. Identify two difference between ionic and covalent bonds

* Ionic Bonds involve the transfer of valance electrons forming ions whereas covalent bonds involve the sharing of valence electrons with no ion formation
* Ionic bonds form only between metals and non-metals whereas covalent bonds usually (but not always) form between two non-metals
* Ionic bonding does not result in molecule formation whereas covalent bonding usually does
* The attractive forces associated with covalent bonds are the electrostatic forces between negatively charged electrons and adjacent positively charged nuclei

1. Complete the following table by writing formulas of the compounds formed from the pairs of elements.



1. Magnesium is a metal and sulphur is a non-metal. Compare the ΔEN value for these elements in MgS to ΔEN value for the non-metal hydrogen and oxygen in water (H2O). Which of the two compounds possesses a greater amount of ionic character in its bond?

ΔEN for MgS = 1.3

ΔEN for H20 = 1.4

We see that the bonds in water actually possess slightly more ionic character than those in magnesium sulphide even though the former compound contacts two non-metals and the latter compound contains a metal and a non-metal