

Unit 5 Worksheet 1

Name:

Draw the dot diagrams of the following:

Elements:

Ions:

I	Br	C	Na ⁺	Cl ⁻	Br ⁻	Ca ²⁺

Bond Types:

0-1.0 bond type is non-polar covalent (NPC)

1.0-1.7 bond type is polar covalent (PC)

> 1.7 bond type is ionic

→ Exceptions: C-O and N-H, .9 is POLAR COVALENT

Fill in the following table:

Compound	Electronegativity of Each Element	Bonds	Difference in Electronegativity	Bond Type
H ₂ O	H= 2.1 O= 3.5	H-O H-H	1.4 0	Polar Covalent Non-Polar Covalent
NaCl	Na= .9 Cl= 3.2	Na-Cl	2.3	Ionic
NH ₃	N= 3.0 H= 2.1	N-H H-H	.9 0	Polar Covalent Non-Polar Covalent
CaCl ₂	Ca= 1.0 Cl= 3.2	Ca-Cl	2.2	Ionic
H ₂ S	H= 2.1 S= 2.6	H-S H-H	.5 0	Non-Polar Covalent Non-Polar Covalent
CH ₄	C= 2.6 H= 2.1	C-H H-H	.5 0	Non-Polar Covalent Non-Polar Covalent
Cl ₄	C= 2.6 I= 2.7	C-I I-I	.1 0	Non-Polar Covalent Non-Polar Covalent
CBr ₄	C= 2.6 Br= 3.0	C-Br Br-Br	.4 0	Non-Polar Covalent Non-Polar Covalent
CO ₂	C= 2.6 O= 3.5	C-O O-O	.9 0	Polar Covalent Non-Polar Covalent
LiCl	Li= 1.0 Cl= 3.2	Li-Cl	2.2	Ionic
NI ₃	N= 3.0 I= 2.7	N-I I-I	.3 0	Non-Polar Covalent Non-Polar Covalent
NO	N= 3.0 O= 3.5	N-O	.5	Non-Polar Covalent
CO	C= 2.6 O= 3.5	C-O	.9	Polar Covalent
N ₂ O	N= 3.0 O= 3.5	N-O N-N	.5 0	Non-Polar Covalent Non-Polar Covalent