

Bonding Homework #1

name: _____

Write the correct formula for each of these ionic compounds AND draw the Lewis Dot Diagrams
(show proper bracketing and charges for ALL ions)

USE DIFFERENT COLORS FOR DIFFERENT IONS.

aluminum bromide _____

potassium sulfide _____

zinc iodide _____

calcium oxide _____

copper (I) chloride _____

titanium (IV) oxide _____

Bonding Homework #2

name: _____

Write the correct formula for each of these ionic compounds AND draw the Lewis Dot Diagrams

(NO bracketing for these molecular — not ionic — compounds)

USE DIFFERENT COLORS FOR DIFFERENT ATOMS.

WATER _____

METHANE _____

CARBON DIOXIDE _____

OXYGEN DIBROMIDE _____

AMMONIA _____

PHOSPHOROUS TRIFLUORIDE _____

| Write a formula of a compound that makes each of these bonds. | | | |
|--|--|----------------------------------|--|
| single POLAR covalent bond | | single NONPOLAR covalent bond | |
| double POLAR covalent bond | | double NONPOLAR covalent bond | |
| triple POLAR covalent bond | | triple NONPOLAR covalent bond | |
| What are the vocabulary words for these definitions? | | | |
| The number of anions surrounding a cation in an ionic solid, or the number of cations surrounding an anion in an ionic solid. | | | |
| Two or metals melted together into a mixture with “better” properties — such as less likely to oxidize or more strength. Sometimes this is a metal and a nonmetal. | | | |
| The tendency to gain an electron from another atom when making a bond. | | | |
| The bond that transfers electrons, and always gets brackets for Lewis Dot Diagrams. | | | |
| The bond that shares electrons, and never gets brackets for Lewis Dot Diagrams. | | | |
| Reason that almost all atoms bonding, or ions bonding end up with 8 electrons in their outer orbits. | | | |

Bonding Homework #4 name: _____

Draw proper Lewis Dot diagrams, take care for sharing electrons vs. transferring them. All of these follow the octet rule except for the hydrogen atoms. USE DIFFERENT COLORS FOR DIFFERENT ATOMS

| | | |
|------------------------------------|------------------------------------|------------------------------------|
| Chlorine Cl_2 | Nitrogen N_2 | Hydrogen H_2 |
| Oxygen O_2 | H_2O | CO_2 |
| Hydrogen monochloride HCl | Methane CH_4 | Hydrogen cyanide HCN |
| Potassium chloride KCl | Magnesium chloride MgCl_2 | Calcium sulfide CS |
| Carbon disulfide CS_2 | Silicon Dioxide SiO_2 | Nitrogen tribromide NBr_3 |

Fill in the chart below. Fill in the chart. Do not say polar when you could say single polar covalent. Do not say double when you mean double nonpolar covalent. Use the bonds' WHOLE NAMES. Don't be lazy. The last one has 2 different bonds in the one molecule, get both names.

| | compound name | Formula | Correctly name the bond or bonds correctly full name. |
|----|-------------------------|------------------------|---|
| 1 | Chromium (VI) fluoride | | |
| 2 | methane | | |
| 3 | Ozone | | |
| 4 | silicon dioxide | | |
| 5 | ammonia | NH_3 | |
| 6 | carbon dioxide | | |
| 7 | sodium hydroxide | | |
| 8 | aluminum fluoride | | |
| 9 | Lithium iodide | | |
| 10 | iron (II) sulfide | | |
| 11 | Boron tribromide | | |
| 12 | ethyne | C_2H_2 | |
| 14 | carbon monoxide | | |
| 15 | Phosphorous trifluoride | | |

Bonding Homework #6
 Fill in this chart, careful with the dots.

name: _____
 Write YES or NO — POLAR or NONPOLAR

| Molecular Compound | Lewis Dot Diagram USE DIFFERENT COLORS FOR DIFFERENT ATOMS. | Polar or Non-polar Bonds? | Does this molecule have radial symmetry? Yes or no | Is the molecule polar or non polar? |
|-------------------------------|--|---------------------------|---|-------------------------------------|
| C ₂ H ₆ | | C:C | | |
| | | C:H | | |
| NBr ₃ | | | | |
| PH ₂ F | | P:F | | |
| | | P:H | | |
| CH ₃ Br | | C:Br | | |
| | | C:H | | |
| H ₂ O | | | | |
| CO | | | | |
| CBr ₄ | | | | |
| CO ₂ | | | | |