

Name: \_\_\_\_\_

1. Complete the following for each molecule in the space provided:

- Draw the Lewis structure(s), including any resonance structures
- Use VSEPR to predict the shape and bond angles
- Indicate as a polar or nonpolar molecule (look for symmetry)

a)  $\text{Br}_2$  (Br-Br)

shape: \_\_\_\_\_

bond angles: \_\_\_\_\_

molecular polarity: \_\_\_\_\_

b)  $\text{O}_2$

shape: \_\_\_\_\_

bond angles: \_\_\_\_\_

molecular polarity: \_\_\_\_\_

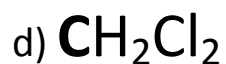
c)  $\text{N}_2$

shape: \_\_\_\_\_

bond angles: \_\_\_\_\_

molecular polarity: \_\_\_\_\_

Name: \_\_\_\_\_



shape: \_\_\_\_\_

bond angles: \_\_\_\_\_

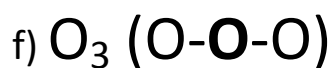
molecular polarity: \_\_\_\_\_



shape: \_\_\_\_\_

bond angles: \_\_\_\_\_

molecular polarity: \_\_\_\_\_



shape: \_\_\_\_\_

bond angles: \_\_\_\_\_

molecular polarity: \_\_\_\_\_



shape: \_\_\_\_\_

bond angles: \_\_\_\_\_

molecular polarity: \_\_\_\_\_

Name: \_\_\_\_\_

h) **NO<sub>2</sub>**

shape: \_\_\_\_\_

bond angles: \_\_\_\_\_

molecular polarity: \_\_\_\_\_

i) **CO<sub>3</sub><sup>2-</sup>**

shape: \_\_\_\_\_

bond angles: \_\_\_\_\_

molecular polarity: \_\_\_\_\_

j) **ClO<sub>2</sub><sup>-</sup>**

shape: \_\_\_\_\_

bond angles: \_\_\_\_\_

molecular polarity: \_\_\_\_\_

Name: \_\_\_\_\_

2. Print and complete the names/formulas in the table. Indicate as ionic (I) or covalent (C), and use the corresponding nomenclature.

<u>Name</u>	<u>Ionic/covalent</u>	<u>Formula</u>
carbon dioxide	_____	_____
sodium chloride	_____	_____
carbon tetrabromide	_____	_____
disulfur monoxide	_____	_____
silver bromide	_____	_____
sulfur dioxide	_____	_____
iron (II) oxide	_____	_____
_____	_____	CO
_____	_____	MgBr <sub>2</sub>
_____	_____	Fe <sub>3</sub> O <sub>2</sub>
_____	_____	N <sub>2</sub> O <sub>4</sub>
_____	_____	SCl <sub>6</sub>
_____	_____	ClF <sub>3</sub>
_____	_____	PCl <sub>5</sub>
(aqueous) nitrite ion	_____	_____
_____	_____	NO <sub>2</sub> (g)
chlorine dioxide gas	_____	_____
_____	_____	ClO <sub>2</sub> <sup>-</sup> (aq)