

Name: _____ Per _____

(8) Which of the following correctly compares the sizes of the neutral atoms magnesium (Mg) and nitrogen (N) to their ions (Mg^{2+} and N^{3-})?

- (a) N is larger than N^{3-} and Mg is larger than Mg^{2+}
- (b) N^{3-} is larger than N and Mg^{2+} is larger than Mg
- (c) N^{3-} is larger than N and Mg is larger than Mg^{2+}
- (d) N is larger than N^{3-} and Mg^{2+} is larger than Mg

(9) Consider the elements nitrogen and fluorine.

(i) Determine the number of atoms of each element needed to form a **covalent** bond. Draw the Lewis structures for this compound. Write the formula for the compound that forms and name the compound.

formula: _____ name: _____

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(ii) Classify the VSEPR Shape of this molecule: _____

(iii) Would the molecule be polar or non-polar?

(10) Consider the elements magnesium and nitrogen.

(i) Determine the number of atoms of each element needed to form an **ionic** bond. Draw the Lewis structures for each atom before the bond forms and after the bond forms. Use arrows to show the movement of electrons and indicate the charge of each ion. Write the formula for the compound that forms and name the compound.

formula: _____ name: _____

Before:	After:

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(ii) The above compound is formed when magnesium metal is combined with nitrogen gas. Write a balanced chemical equation for the reaction that occurs to form the compound.

(iii) A reaction is carried out in which 14.6 g of magnesium metal are combined with 9.50 g of nitrogen gas. The actual mass of the product obtained is 18.4 g, what is the percent yield for the reaction?