**Honors – VSEPR Quiz**

For questions 1-3, draw the Lewis structure of the indicated compound, and then determine the shape and bond angle of the molecule. Show resonance structures for compounds in which they exist. (Lewis structure, 5 pt, shape 2 pt, angle 2 pt):

1. SeBr2 shape: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

bond angle: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. ammonium ion shape: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

bond angle: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. CHO2-1 shape: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

bond angle: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. When you draw the methane molecule, the bond angles are all shown as being 90o. However, methane actually has a bond angle considerably larger than this. Why is the bond angle of methane so much higher than the 90o we see in Lewis structures? (4 pt)
2. Why does BH3 have a much higher bond angle than NH3? (4 pt)
3. Here are some **bonus** problems for you to challenge those of you who have spent a lot of time contemplating Lewis structures. For those of you who don’t get these right, they won’t count against your grade in any way, shape, or form, so don’t worry about it.

In this class, we have drawn Lewis structures only for covalent compounds. Given this information:

1. Explain why haven’t drawn them for ionic compounds. (2 pt)
2. Explain why we can’t determine bond angles in ionic compounds. (2 pt)