

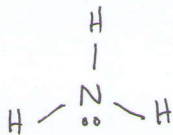
Name Mr. Shank

Period AP1, 2, 3

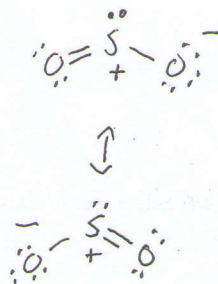
**Quiz 3: Lewis Structures**

Draw the Lewis structures for each molecule below. Draw **all resonance structures**, and make sure to indicate **any non-zero formal charges** next to the appropriate atoms.

1) NH<sub>3</sub> <sup>+2</sup>  
Total valence e<sup>-</sup> = 5 + 3(1) = 8



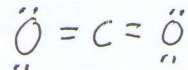
2) SO<sub>2</sub> <sup>+4</sup>  
Total valence e<sup>-</sup> = 6 + 2(6) = 18



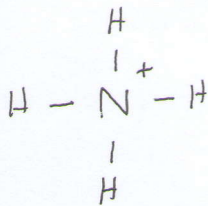
- or -



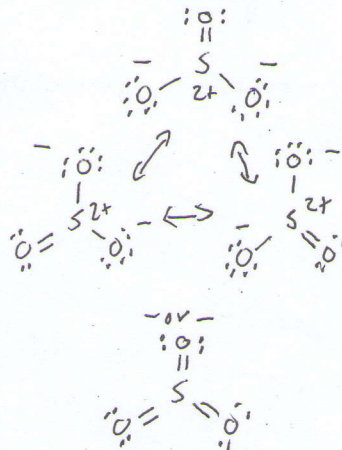
3) CO<sub>2</sub> <sup>+2</sup>  
Total valence e<sup>-</sup> = 4 + 2(6) = 16



4) NH<sub>4</sub><sup>+</sup> <sup>+3</sup>  
Total valence e<sup>-</sup> = 5 + 4(1) - 1 = 8

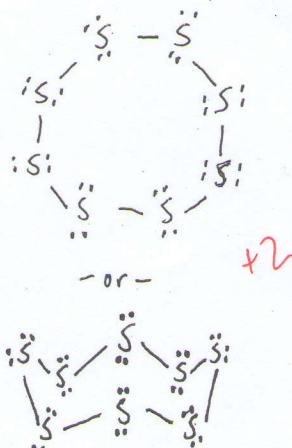


5) SO<sub>3</sub> <sup>+4</sup>  
Total valence e<sup>-</sup> = 6 + 3(6) = 24

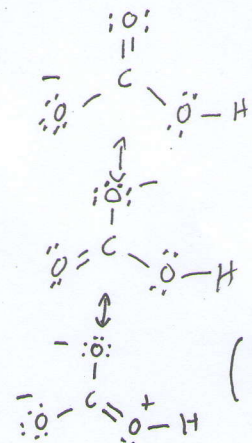


8) S<sub>8</sub>

Total valence e<sup>-</sup> = 8(6) = 48



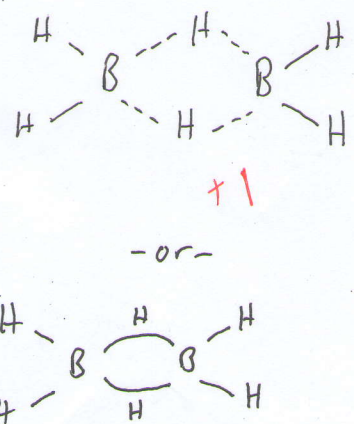
6) HCO<sub>3</sub><sup>-</sup> <sup>+4</sup>  
Total valence e<sup>-</sup> = 1 + 4 + 3(6) + 1 = 24



(not needed for full credit)

9) B<sub>2</sub>H<sub>6</sub>

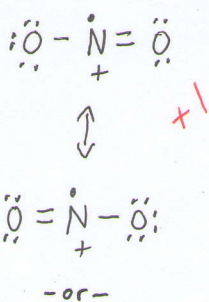
Total valence e<sup>-</sup> = 2(3) + 6(1) = 12



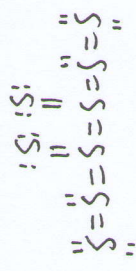
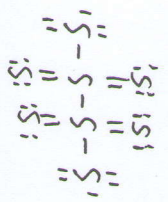
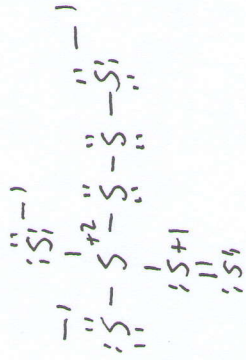
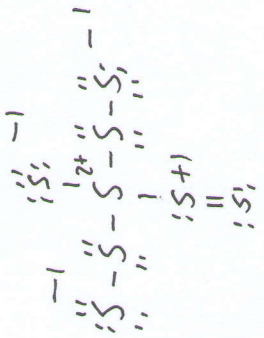
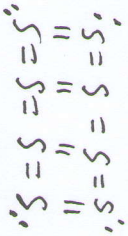
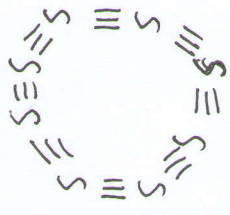
Extra Credit

7) NO<sub>2</sub>

Total valence e<sup>-</sup> = 5 + 2(6) = 17



$\text{O} = \ddot{\text{N}} - \ddot{\text{O}} \leftrightarrow \ddot{\text{O}} - \ddot{\text{N}} = \text{O}$   
(other answers also accepted)



Fun With S<sub>8</sub>

