

### +WS 3.9 Exceptions to the Octet Rule

You already know (hopefully) that *most* elements prefer an \_\_\_\_\_ of electrons. Boron is one exception, which only wants \_\_\_\_\_. There are other exceptions, including elements which can have 10 or even 12 \_\_\_\_\_ electrons around them! These extra electrons tend to form bonds in empty, unused “d” orbitals. For example, \_\_\_\_\_’s valence shell configuration is  $3s^23p^3$ . If its vacant “d” orbitals are used, this element can form more bonds. **Ans IRO: cesium octet phosphorus six valence**

Determine the Lewis structure and geometry of the following exceptions to the octet rule:

	<u>Lewis structure</u>	<u>electronic geometry</u>	<u>molecular geometry</u>
PF <sub>5</sub>			
XeF <sub>4</sub>			
XeF <sub>2</sub>			
SF <sub>6</sub>			
I <sub>3</sub> <sup>-</sup>			
SF <sub>4</sub>			
IF <sub>5</sub>			
ICl <sub>4</sub> <sup>-</sup>			