

D. Lewis Dot Structures: Some of these are more difficult! (An \* designates a structure that does not follow the octet rule.)

<p><b>CCl<sub>4</sub></b></p> <pre>       :Cl:         :Cl: C :Cl:               :Cl:           </pre>	<p><b>BeCl<sub>2</sub>*</b></p> <pre> :Cl: * Be * :Cl:           </pre>	<p><b>BF<sub>3</sub>*</b></p> <pre>       :F:         :F: B :F:               :F:           </pre>	<p><b>SF<sub>4</sub>*</b></p> <pre>       :F:         :F: S :F:               :F:           </pre>	<p>28 6 — 32</p>
<p><b>CN<sup>-</sup></b></p> <pre> (:C:::N:)<sup>-1</sup>           </pre>	<p><b>NO<sub>2</sub><sup>-</sup></b></p> <pre>       :O:         :O: N :O:               :O:           </pre> <p>resonance</p>	<p><b>NO<sub>3</sub><sup>-</sup></b></p> <pre>       :O:         :O: N :O:               :O:           </pre> <p>resonance</p>	<p><b>NH<sub>4</sub><sup>+</sup></b></p> <pre>       [ H ]         H: N :H               H           </pre> <p>+</p>	
<p><b>O<sub>3</sub></b></p> <pre>       :O:         :O: O :O:               :O:           </pre> <p>resonance</p>	<p><b>ClF<sub>3</sub>*</b></p> <pre>       :F:         :F: Cl :F:           </pre>	<p><b>SO<sub>4</sub><sup>-2</sup></b></p> <pre>       :O:         :O: S :O:               :O:           </pre> <p>2-</p>	<p><b>SF<sub>6</sub>*</b></p> <pre>       :F:         :F: S :F:               :F:           </pre>	
<p><b>AsO<sub>4</sub><sup>-3</sup></b></p> <pre>       :O:         :O: As :O:               :O:           </pre>	<p><b>I<sub>3</sub><sup>-</sup>*</b></p> <pre>       [ I I I ]           </pre>	<p><b>XeCl<sub>2</sub>*</b></p> <pre> :Cl: Xe :Cl:           </pre>	<p><b>PF<sub>5</sub>*</b></p> <pre>       :F:         :F: P :F:               :F:           </pre>	
<p><b>CO<sub>3</sub><sup>-2</sup></b></p> <pre>       :O:         :O: C :O:               :O:           </pre> <p>2-</p> <p>resonance</p>	<p><b>BrF<sub>5</sub>*</b></p> <pre>       :F:         :F: Br :F:               :F:           </pre>	<p><b>C<sub>2</sub>H<sub>6</sub></b></p> <pre>       H H           H: C : C :H                 H H           </pre>	<p><b>PO<sub>4</sub><sup>-3</sup></b></p> <pre>       :O:         :O: P :O:               :O:           </pre> <p>3-</p>	<p>24 3 — 32</p>

18  
4  
—  
24

Name: Key

### Lewis Dot Structure Worksheet

A. Draw Lewis Dot Structures for the following covalent compounds.

$\text{CH}_4$ 	$\text{H}_2\text{O}$ 	$\text{CO}_2$ 	$\text{N}_2$ 
$\text{C}_2\text{H}_4$ 	$\text{CO}$ 	$\text{O}_2$ 	$\text{NH}_3$ 

B. Draw Lewis Dot structures for the following ionic compounds

$\text{MgO}$ 	$\text{CaCl}_2$ 	$\text{Na}_2\text{S}$ 	$\text{Al(OH)}_3$ 
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C. Classify the bond in each compound as ionic, polar covalent or nonpolar covalent. *per bond, so just between two elements*

$\leq 0.4$   
 $\geq 1.67$   
 $0.4 - 1.67$

Compound	Type of Bond	Compound	Type of Bond
$\text{TiO}_2$ $3.5 - 1.5 = 2$	ionic	$\text{F}_2$	nonpolar
$\text{CS}_2$ $2.5 - 2.5$	nonpolar	$\text{CsF}$	ionic
$\text{AlCl}_3$ $1.5$	polar	$\text{NaI}$	ionic
$\text{CH}_4$ $0.4$	nonpolar or polar	$\text{KCl}$	ionic
$\text{CO}_2$ $1.0$	polar	$\text{HBr}$	polar

