

Name: _____

Hydro 5 Practice 3

Target	1	2 (all of 1 plus)	3 (all of 2 plus)	4 (all of 3 plus)
LE 5.7 Preparedness	Does not complete formative or summative in an effortful and timely manner, is not engaged, does not arrive on time with class materials ready to learn, does not communicate when issues arise	Completes formative or summative in an effortful or timely manner, is sometimes engaged, sometimes arrives on time with class materials ready to learn, sometimes communicates when issues arise	Completes formative or summative in an effortful and timely manner, remains engaged, arrives on time with materials ready to learn, communicates when issues arise	Completes formative or summative in an effortful and timely manner, remains engaged, arrives on time with materials ready to learn, communicates when issues arise, and is reflective on strengths and challenges within your preparedness skill
LE 5.6 Precision	Recognizes the importance of products that are planned, edited, and completed with care	Attempts products that are planned, edited, and completed with care	Creates products that are planned, edited, and completed with minimal errors	Creates products that are planned, edited, and completed free from errors or need for revision
Hydro 5	I can draw Lewis structures of molecules and formula units.	I can determine shapes of molecules.	I can use electronegativities and geometries to predict polarity.	
MP3 Hydrosphere (Shape, Polarity, Solubility)	I can create a Lewis structure of a particle of a substance, and use it to predict the shape of a molecule.	(all of 1 plus) I can use electronegativities of atoms and shapes of molecules to predict polarity	(all of 2 plus) I can demonstrate an understanding of the relationship between polarity and solubility	(all of 3 plus) aced it!

Molecular Shape and Polarity Practice

Determine the molecular geometry and polarity of the molecules below. Be sure to do the following:

- | | |
|---|---|
| a) Create a Lewis Dot structure of the molecule | d) Indicate the number of Regions of Electron Density Around the Central Atom (REDACA) |
| b) Determine the central atom (highlight) | e) Indicate the molecular geometry and sketch it |
| c) Highlight non-bonding pairs of electrons and bonding "clumps" of electrons on the CA | f) In your sketch show bond and net polarity |
| | g) Indicate if the molecule is polar or non-polar |

Name, Formula, Valence e-	Electron Dot (Lewis) Structure		1. Central Atom (s), 2. REDACA, 3. Geometry	3D Sketch, Bond and Net Polarity (Circle polar or nonpolar)
	Atoms and sharing	Final Lewis Sketch		
C_2F_3Cl				EN: circle the corners... are they the same? ____ Polar or Nonpolar
diatomic molecules (2 atoms)				geometry: there is no central atom... the only geometry for two points is a line
molecules with more than one central atom				· geometry: determine geometry around each CA separately · polarity: look at the outside corners of the whole molecule, and determine if they are the same (nonpolar) OR different (polar)

Name, Formula, Valence e-	Electron Dot (Lewis) Structure		Central Atom(s), REDACA(s), Geometry(s)	3D Sketch, Bond and Net Polarity (Circle polar or nonpolar)
	Atoms and sharing	Final Lewis Sketch		
HF				EN: circle corners... same? ____ Polar or Nonpolar
C ₂ F ₄	F C C F F F			EN: circle corners... same? ____ Polar or Nonpolar
CF ₄	C in the middle			EN: circle corners... same? ____ Polar or Nonpolar
CFCl ₃	C in the middle			EN: circle corners... same? ____ Polar or Nonpolar

Name, Formula, Valence e ⁻	Electron Dot (Lewis) Structure		Central Atom(s), REDACA(s), Geometry(s)	3D Sketch, Bond and Net Polarity (Circle polar or nonpolar)
	Atoms and sharing	Final Lewis Sketch		
H ₂ O				EN: circle corners... same? ____ Polar or Nonpolar
C ₂ Cl ₂	Cl C C Cl			EN: circle corners... same? ____ Polar or Nonpolar

Challenge: Draw three arrangements (2 polar and one not polar) for C₂F₂Cl₂. Show bond polarity and net polarity.

C ₂ F ₂ Cl ₂ C's bonded to each other, F and Cl are bonded to the C's			
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