

## Problem set 2.1

# Molecular Shape

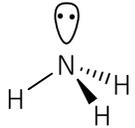
**Direction:** For Each of the following molecules:

1) Draw the Lewis structures

2) Determine a class of the molecule ( $AX_2$ ,  $AX_3$ , ...)

3) Identify the electron-group arrangement.

4) Draw a three-dimensional sketch of the molecule and name the molecular shape

NO.	Molecular formula	Lewis structure	Class	Molecular Shape	Electron group arrangement	Name of Molecular Shape
1	$NH_3$	$\begin{array}{c} \cdot\cdot \\   \\ H-N-H \\   \\ H \end{array}$	$AX_3E_1$ (4 e <sup>-</sup> group)		Tetrahedral arrangement	Trigonal pyramidal shape
2	$CH_2Cl_2$					
3	$PF_3$					

NO.	Molecular formula	Lewis structure	Class	Molecular Shape	Electron group arrangement	Name of Molecular Shape
4	H <sub>2</sub> O					
5	PCl <sub>5</sub>					
6	SF <sub>4</sub>					
7	ClF <sub>3</sub>					

NO.	Molecular formula	Lewis structure	Class	Molecular Shape	Electron group arrangement	Name of Molecular Shape
8	SF <sub>6</sub>					
9	IF <sub>5</sub>					
10	XeF <sub>4</sub>					

