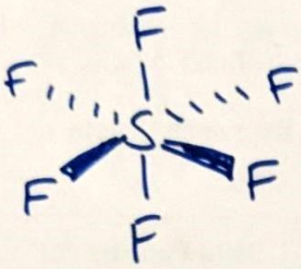
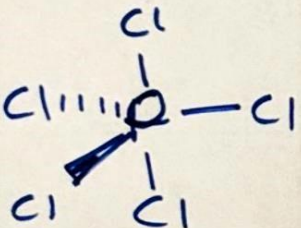
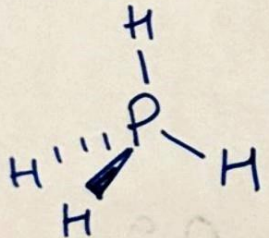


KEY

SHAPES & POLARITY of COMPOUNDS
(Chemistry 11)

1. For each of the following compounds: (a) Draw and name the 3D structure of the compound.
(b) Determine the Bond Polarity of a single bond within the molecule
(c) Determine the overall Polarity of the molecule (Polar/Non-polar)

Formula	Name and Drawn 3D Structure	Bond Polarity (ΔEN)	Overall Molecular Polarity
(a) H_2S :	<p>Bent</p>	0.4	Polar
(b) SiH_4 :		0.4	Non-Polar
(c) $InCl_3$:		1.3	Non-Polar
(d) AsH_3 :		0.9	Polar

Formula	Name and Draw 3D Structure	Bond Polarity (ΔEN)	Overall Molecular Polarity
(e) SF ₆ :		1.5	Non-Polar
(f) Br ₂ :	Br - Br	0.0	Non-Polar
(g) PCl ₅ :		0.9	Non-Polar
(h) PH ₄ ⁺ :		0	Non-Polar

(i) Consider the molecule CF₄. What is its shape? Tetrahedral

Each of the bonds between C and F atoms is polar, yet the molecule as a whole is nonpolar. **Explain.**

Due to symmetry all the dipoles will cancel.