

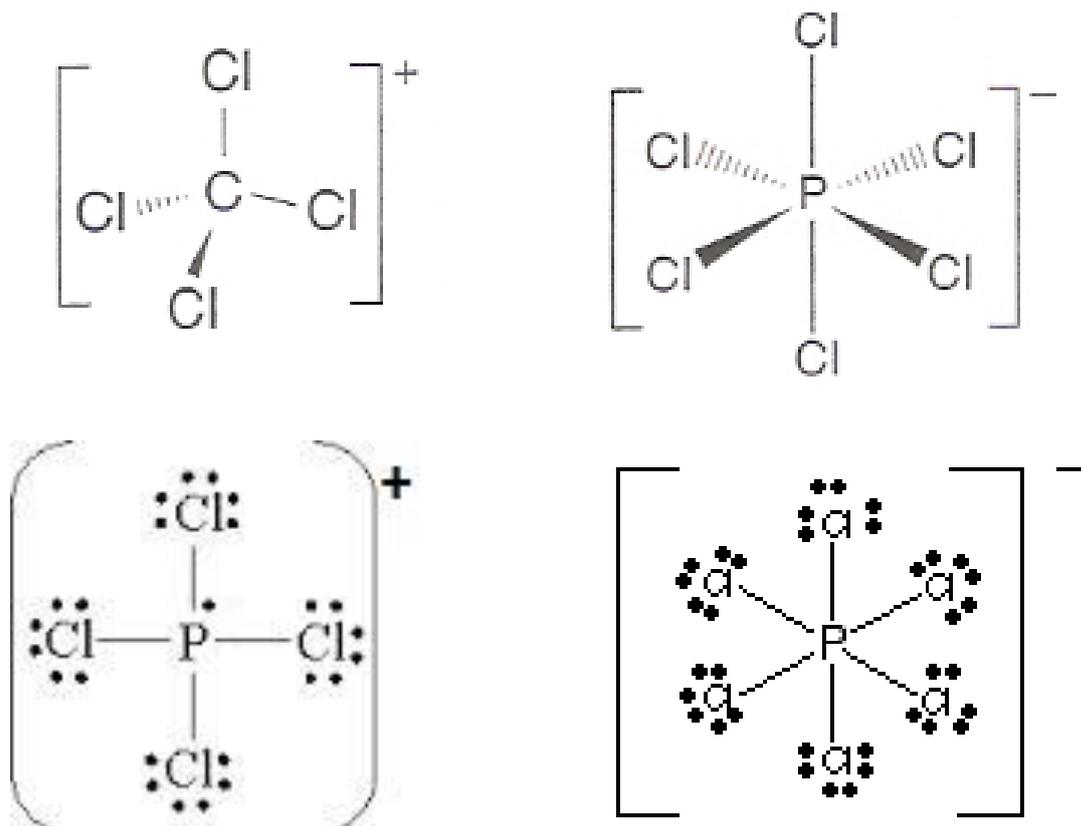
### Question #46436, Chemistry, Inorganic Chemistry

Draw Lewis structures of  $\text{PCl}_4^+$  ions and  $\text{PCl}_6^-$ .

Predict the

- shapes of these ions using VSEPR theory and
- hybridization states of phosphorus atom in these two ions.

**Answer:**



1)  $\text{sp}^3$ -hybridization occurs. Obviously, the cation has a tetrahedral phosphorus tetrachloride view.

2) This shows what happens  $\text{sp}^3\text{d}^2$ -hybridization. Obviously, phosphorus hexachloride anion has an octahedral form.