

Question 6 (Answer: C)

- Lone pairs repel more strongly than bonding pairs, so each lone pair squeezes the angles around its atom.
- A carbon with four single bonds is about 109.5° ; one lone pair drops it to roughly 107° and two to about 104.5° .
- So rank the three atoms by how many lone pairs they carry – fewest lone pairs gives the largest angle.

Question 5 (Answer: D)

- Any molecule of three atoms or fewer is automatically planar, so CO_2 and H_2O both qualify.
- Ethene is planar because each carbon is trigonal planar around the $\text{C}=\text{C}$.
- PH_3 and NH_3 are pyramidal, and C_3H_6 has a carbon with hydrogens out of the plane.