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Molecule Shapes

A.K.Gupta, TA (chemistry)

What shape is water?

a. Tetrahedral
b. Bent
c. Trigonal planar
d. Linear

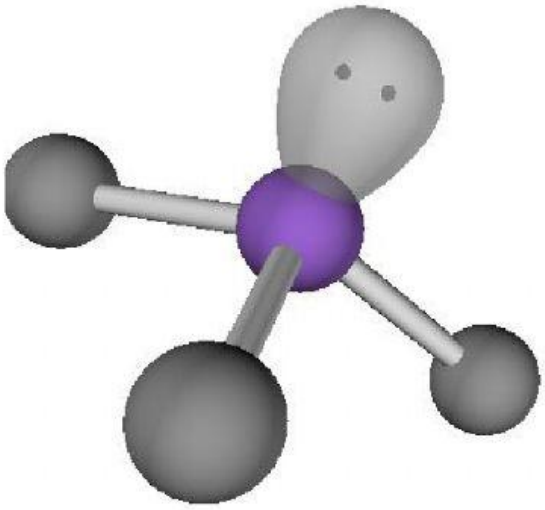
Which of these molecules has a linear molecule geometry?

a. CO_2
b. O_3
c. Both
d. Neither

O_3 has 18 valence electrons:

The bonding in ozone is best represented as a
a blend of these two “resonance structures”.

Which molecule could be represented with this diagram?



a. BH_3

b. CH_4

c. NH_3

What is the molecular geometry of H_2S?

a. Linear

b. Tetrahedral

c. Trigonal pyramidal

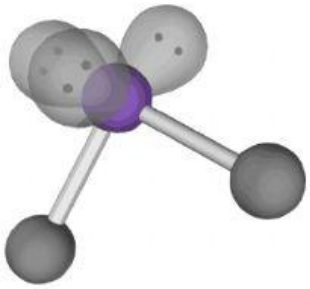
d. Bent

What is the **molecule geometry** and **bond angle** for a molecule AX_2 which has 3 lone pairs on the central atom?

A

Bent

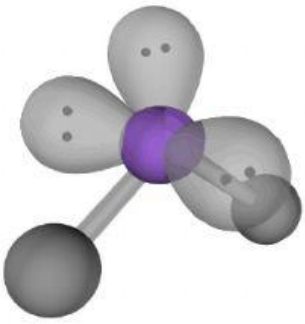
Bond angle ≈ 90°



B

Bent

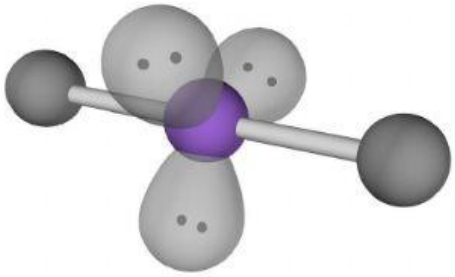
Bond angle ≈ 120°



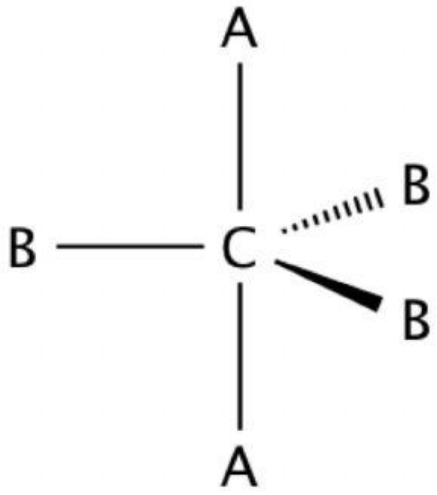
C

Linear

Bond angle ≈ 180°



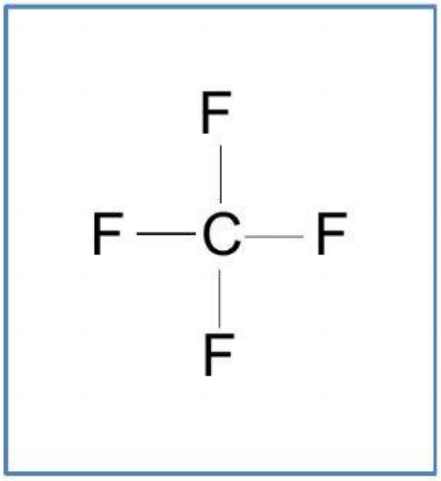
In a system with **4 atoms** and **1 lone pair**, predict the position of the lone pair.



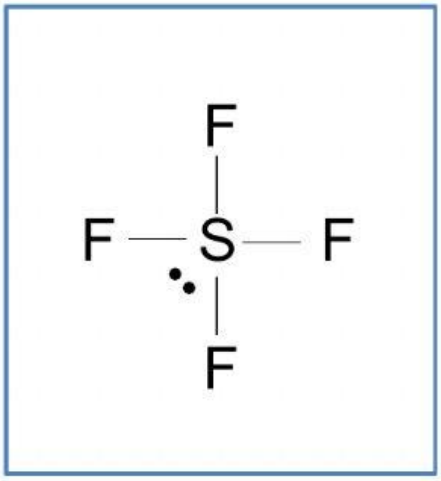
A. One of the A locations
B. One of the B locations

Which of these molecules would you expect to have *different bond angles in the real world* than are predicted by the model?

A



B



C