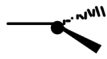
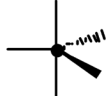
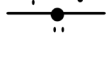


### Molecular Geometry Summary Sheet

| # Groups of $\tilde{e}$ on Central Atom | Electron Pair Geometry | Approximate Bond Angle                              | # of Outer Atoms (# of X) | # Lone Pairs on Central Atom (# of E) | Geometry/ Shape Name<br>(VSEPR code/ set-up) | Shape*                                                                                | Example                             |
|-----------------------------------------|------------------------|-----------------------------------------------------|---------------------------|---------------------------------------|----------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------------|
| 2                                       | linear                 | $180^\circ$                                         | 2                         | 0                                     | linear (AX2)                                 |    | BeCl <sub>2</sub> , CO <sub>2</sub> |
| 3                                       | trigonal planar        | $120^\circ$                                         | 3                         | 0                                     | trigonal planar (AX3)                        |    | BF <sub>3</sub>                     |
|                                         |                        | $104.5^\circ$                                       | 2                         | 1                                     | bent (AX2E)                                  |    | SO <sub>2</sub>                     |
| 4                                       | tetrahedral            | $109.5^\circ$                                       | 4                         | 0                                     | tetrahedral (AX4)                            |    | CH <sub>4</sub>                     |
|                                         |                        | $107^\circ$                                         | 3                         | 1                                     | trigonal pyramidal (AX3E)                    |    | NH <sub>3</sub>                     |
|                                         |                        | $<109.5^\circ$                                      | 2                         | 2                                     | bent (AX2E2)                                 |   | H <sub>2</sub> O                    |
| 5                                       | trigonal bipyramidal   | $120^\circ$ (in plane) & $90^\circ$ (above & below) | 5                         | 0                                     | trigonal bipyramidal (AX5)                   |  | PCl <sub>5</sub>                    |
|                                         |                        | $<120^\circ$ & $<90^\circ$                          | 4                         | 1                                     | seesaw (AX4E)                                |  | SF <sub>4</sub>                     |
|                                         |                        | $<90^\circ$                                         | 3                         | 2                                     | T-shaped (AX3E2)                             |  | ClF <sub>3</sub>                    |
|                                         |                        | $180^\circ$                                         | 2                         | 3                                     | linear (AX2E3)                               |  | I <sub>3</sub> <sup>-</sup>         |
| 6                                       | octahedral             | $90^\circ$                                          | 6                         | 0                                     | octahedral (AX6)                             |  | SF <sub>6</sub>                     |
|                                         |                        | $<90^\circ$                                         | 5                         | 1                                     | square pyramidal (AX5E)                      |  | BrF <sub>5</sub>                    |
|                                         |                        | $90^\circ$                                          | 4                         | 2                                     | square planar (AX4E2)                        |  | XeF <sub>4</sub>                    |