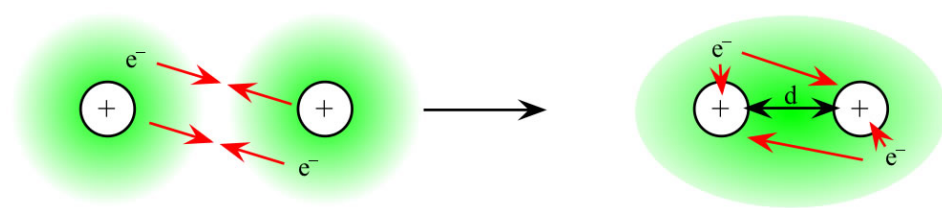


WKS – Chem Honors
Covalent Bonding & Compounds

NAME Answer Key
 Period _____ Date _____

- What is a covalent bond? How does it differ from an ionic bond? Why does it form?
 A covalent bond is the electrostatic attraction between the nucleus of one atom and the electron(s) of another. It involves *sharing* electrons rather than transferring electrons, and forms so that each atom can fill its valence shell—usually eight electrons (octet rule), except hydrogen, which forms a duet.
- On the atomic diagram below, indicate with arrows this attraction, then redraw the atoms to show the covalent bond formation and label the bond length, d .



- How many electrons are shared in a single covalent bond? Double bond? Triple bond? Rank them in order of length and strength.
 Single bond: 2 e^- ; Double bond: 4 e^- ; Triple bond: 6 e^-
 Length: Single > Double > Triple
 Strength: Triple > Double > Single

In the table below, determine the formula of the binary covalent compound or acid from its name, or the name of the compound from the formula.

Name to Formula	Formula to Name
4. antimony tribromide $SbBr_3$	15. P_4S_5 tetraphosphorous pentasulfide
5. iodine pentafluoride IF_5	16. SeO_3 selenium trioxide
6. dinitrogen trioxide N_2O_3	17. Si_2Br_6 disilicon hexabromide
7. ammonia NH_3	18. SCl_4 sulfur tetrachloride
8. phosphorus triiodide PI_3	19. CH_4 methane
9. carbon monoxide CO	20. NF_3 nitrogen trifluoride
10. phosphorous pentachloride PCl_5	21. N_2O dinitrogen monoxide
11. tetraiodine nonoxide I_4O_9	22. IF_7 iodine heptafluoride
12. bromine trichloride $BrCl_3$	15. P_4O_{10} tetraphosphorous decoxide
13. xenon hexafluoride XeF_6	16. SeF_4 selenium tetrafluoride