WORKSHEET: Ionic vs. Covalent! Name: KEY Per:

Determine whether the following compounds are **covalent** or **ionic** and give them their **proper formulas**.

1. Lead (II) phosphate — ionic — Pb^{2+} PO_4^{3-} — $Pb_3(PO_4)_2$
2. Potassium nitrite — ionic — K^+ NO_3^- — KNO_3
3. Sulfur dioxide — covalent — SO_2
4. Ammonium nitrate — ionic — NH_4^+ NO_3^- — NH_4NO_3
5. Iodine heptafluoride — covalent — IF_7
6. Calcium hydroxide — ionic — Ca^{2+} OH^- — $Ca(OH)_2$
7. Dinitrogen pentaoxide — covalent — N_2O_5
8. Barium carbonate — ionic — Ba^{2+} CO_3^{2-} — $BaCO_3$
9. Chromium (III) sulfite — ionic — Cr^{3+} SO_3^{2-} — $Cr_2(SO_3)_3$
10. Phosphorus pentafluoride — covalent — PF_5

Determine whether the following compounds are **covalent** or **ionic** and give them their **proper names**.

11. $Ba(NO_3)_2$ (metal) — ionic — barium nitrate
12. CO (nonmetals) — covalent — carbon monoxide
13. PCl_3 (nonmetals) — covalent — phosphorus trichloride
14. KI (metal + nonmetal) — ionic — potassium iodide
15. CF_4 (nonmetals) — covalent — carbon tetrafluoride
16. MgO (metal) — ionic — magnesium oxide
17. Cu_2S (metal) — ionic — copper (I) sulfide
18. SO_2 (nonmetals) — covalent — sulfur dioxide
19. NCl_3 (nonmetals) — covalent — nitrogen trichloride
20. XeF_6 (nonmetals) — covalent — xenon hexafluoride

Compare ionic and covalent compounds in the following properties:

21. electrical conductivity of the compound in aqueous solution
    ionic are good conductors when dissolved in water while covalent are not good conductors
22. electrical conductivity of the compound in liquid form
    same as #22 (except in liquid form instead of dissolved)
23. solubility in water
    ionic compounds are soluble in water while covalent compounds are not
24. melting points
    ionic compounds have higher melting points than covalent compounds
25. which categories of elements (metal/nonmetal) usually bond
    ionic compounds are composed of metals + nonmetals
    covalent compounds are composed of only nonmetals