

## Binary Ionic Compounds

## ANSWER KEY

**Directions:** First quickly scan the worksheet and circle any metals (as a symbol or as a name) that is a transition metal. Then either give the same or chemical formula as necessary for each problem below.

*Remember that transition metals can have multiple oxidation states, so you are required to indicate the appropriate oxidation state in parenthesis when naming them. You must use the subscript and oxidation state of the anion to help determine the oxidation state of the transition metal.*

1. lithium fluoride  $\text{LiF}$
2. lithium chloride  $\text{LiCl}$
3. lithium oxide  $\text{Li}_2\text{O}$
4. lithium nitride  $\text{Li}_3\text{N}$
5. lithium phosphide  $\text{Li}_3\text{P}$
6. beryllium fluoride  $\text{BeF}_2$
7. beryllium oxide  $\text{BeO}$
8. beryllium sulfide  $\text{BeS}$
9. boron fluoride  $\text{BF}_3$
10. boron chloride  $\text{BCl}_3$
11. boron bromide  $\text{BBr}_3$
12. boron oxide  $\text{B}_2\text{O}_3$
13. boron nitride  $\text{BN}$
14. sodium fluoride  $\text{NaF}$
15. copper (I) fluoride  $\text{CuF}$
16. copper (II) chloride  $\text{CuCl}_2$
17. copper (I) oxide  $\text{Cu}_2\text{O}$
18. copper (II) oxide  $\text{Cu}_2\text{O}$
19. copper (I) nitride  $\text{Cu}_3\text{N}$
20. copper (II) nitride  $\text{Cu}_3\text{N}$
21. sodium oxide  $\text{Na}_2\text{O}$
22. sodium nitride  $\text{Na}_3\text{N}$
23. lead (II) fluoride  $\text{PbF}_2$
24. lead (IV) fluoride  $\text{PbF}_4$
25. lead (II) sulfide  $\text{PbS}$
26. lead (IV) sulfide  $\text{PbS}_2$ , not  $\text{Pb}_2\text{S}_4$
27. lead (IV) nitride  $\text{Pb}_3\text{N}_4$
28. lead (IV) oxide  $\text{PbO}_2$ , not  $\text{Pb}_2\text{O}_4$
29. iron (III) fluoride  $\text{FeF}_3$
30. iron (II) bromide  $\text{FeBr}_2$
31. iron (III) oxide  $\text{Fe}_2\text{O}_3$
32. chromium (VI) phosphide  $\text{CrP}_2$ , not  $\text{Cr}_3\text{P}_6$
33. iron (III) phosphide  $\text{FeP}$
34. aluminum fluoride  $\text{AlF}_3$
35. aluminum iodide  $\text{AlI}_3$
36. aluminum oxide  $\text{Al}_2\text{O}_3$
37. manganese (VII) oxide  $\text{Mn}_2\text{O}_7$
38. manganese (IV) bromide  $\text{MnBr}_4$
39. tin (II) selenide  $\text{SnSe}$
40. tin (IV) oxide  $\text{SnSe}_2$ , not  $\text{Sn}_2\text{Se}_4$