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Chemistry 11

Atoms Worksheet

Directions: Odd # - List all Elements and the # of atoms or each element.
Even # - Total # of atoms in this molecule.

1. H_2O 2 Hydrogen atoms, 1 oxygen atom
2. ClO_2 3 atoms total
3. NH_3 _____
4. $PbCl_2$ _____
5. CCl_4 _____
6. C_3H_8 _____
7. C_5H_{12} _____
8. $Ca(OH)_2$ _____
9. $BaSO_4$ _____
10. $Mg(NO_3)_2$ _____
11. $Al(ClO_3)_3$ _____
12. $NiSO_4$ _____
13. HNO_3 _____
14. P_4O_{10} _____
15. C_2H_5OH _____
16. HF_2 _____
17. $Mg(ClO_4)_2$ _____
18. $MnCl_2$ _____
19. $Cr(NO_3)_3$ _____
20. $Zn(NO_3)_2$ _____
21. $Sn(SO_4)_2$ _____
22. $BaCO_3$ _____
23. $NaClO$ _____
31. $Fe(C_2H_3O_2)_3$ _____
32. KCN _____
33. KCl _____
34. $Cr(OH)_3$ _____
35. $Fe(IO_4)_3$ _____
36. PBr_5 _____
37. $KMnO_4$ _____
38. $Sr(NO_3)_2$ _____
39. $CaCO_3$ _____
40. $2NH_3$ _____
41. $5CO$ _____
42. $3CCl_4$ _____
43. $2FeCO_3$ _____
44. $2(NH_4)_2CO_3$ _____
45. $5HIO_2$ _____
46. $3HNO_2$ _____
47. $10H_2SO_4$ _____
48. $5HCl$ _____
49. $6CH_4$ _____
50. $3MgCl_2$ _____
51. $5C_3H_8$ _____
52. $2PCl_5$ _____
53. $6NO_2$ _____

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Each particle of the following compounds contains the atoms listed. Write the formula of each compound.

1. One copper atom and one sulphur atom _____

2. One nitrogen and three hydrogen atoms _____

3. Two hydrogen and one sulphur atom _____

4. One hydrogen, one nitrogen and three oxygen atoms _____

5. Two potassium, one carbon and three oxygen atoms _____

6. Two aluminum and three oxygen atoms _____

7. One iron, one phosphorous and four oxygen atoms _____

8. One nitrogen, four hydrogen, one carbon and three oxygen atoms _____

9. One sodium, one manganese and four oxygen atoms _____

10. One potassium, one chlorine and three oxygen atoms _____

11. Six carbons, twelve hydrogen and six oxygen atoms _____

12. One carbon, three hydrogen, one oxygen and one hydrogen atom. _____

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Writing Chemical Formulas (Basic)

Directions: Write the formula for each of the following.

1. Calcium oxide _____
2. Lithium nitride _____
3. Magnesium sulphide _____
4. Silver chloride _____
5. Strontium fluoride _____
6. Barium bromide _____
7. Cesium phosphide _____
8. Potassium iodide _____
9. Aluminum nitride _____
10. Zinc sulphide _____
11. Gallium bromide _____
12. Strontium oxide _____
13. Rubidium nitride _____
14. Silver oxide _____
15. Magnesium phosphide _____
16. Barium oxide _____
17. Zinc iodide _____
18. Cesium chloride _____
19. Lithium sulphide _____
20. Aluminum fluoride _____
21. Beryllium selenide _____
22. Silver phosphide _____
23. Calcium bromide _____
24. Barium nitride _____

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Writing Chemical Formulas (Polyatomic)

Directions: Write the formula for each of the following.

1. Aluminum iodate _____
2. Zinc cyanate _____
3. Potassium phosphite _____
4. Silver hypoiodite _____
5. Lithium perbromate _____
6. Magnesium thiocyanate _____
7. Cesium bisulphate _____
8. Strontium nitrate _____
9. Sodium bicarbonate _____
10. Silver oxalate _____
11. Barium chlorate _____
12. Aluminum acetate _____
13. Rubidium borate _____
14. Beryllium silicate _____
15. Calcium hydrogen oxalate _____
16. Lithium hypobromite _____
17. Potassium amide _____
18. Sodium selenate _____
19. Silver chromite _____
20. Aluminum chromite _____
21. Zinc hydroxide _____
22. Barium thiosulphate _____
23. Magnesium benzoate _____
24. Strontium molybdate _____

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Writing Chemical Formulas (Multivalent)

Directions: Write the formula for each of the following compounds. Have fun ☺

1. Titanium (III) oxide _____
2. Iron (II) sulphide _____
3. Cobalt (III) phosphite _____
4. Lead (IV) bromide _____
5. Manganese (II) bisulphate _____
6. Gold (III) nitride _____
7. Chromium (VI) phosphate _____
8. Nickel (II) sulphide _____
9. Platinum (IV) phosphide _____
10. Palladium (III) hypochlorite _____
11. Iron (III) hydroxide _____
12. Copper (I) acetate _____
13. Tin (IV) thiocyanate _____
14. Lead (II) chloride _____
15. Vanadium (V) sulphite _____
16. Iron (II) monohydrogen phosphate _____
17. Cobalt (II) sulphate _____
18. Chromium (VI) oxide _____
19. Titanium (IV) phosphide _____
20. Gold (III) nitrite _____
21. Antimony (V) hypochlorite _____
22. Cobalt (III) bicarbonate _____
23. Molybdenum (II) nitride _____
24. Gold (I) bisulphate _____

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Chemistry 11

Naming Compounds Worksheet - Multivalent

Directions: Name each of the following compounds. Enjoy the Chem-is-try ☺

1. CuOH _____
2. $\text{Mn}(\text{SO}_4)_2$ _____
3. $\text{Co}(\text{BrO}_2)_3$ _____
4. $\text{Pb}(\text{CrO}_4)_2$ _____
5. CrP _____
6. $\text{Pt}(\text{SiO}_3)_2$ _____
7. SnS _____
8. $\text{Mo}_2(\text{CO}_3)_3$ _____
9. $\text{Ni}_2(\text{HPO}_4)_3$ _____
10. BiBO_3 _____
11. $\text{Pd}(\text{B}_4\text{O}_7)_2$ _____
12. $\text{Sb}(\text{IO}_3)_3$ _____
13. $\text{Au}(\text{HS})_3$ _____
14. $\text{Co}(\text{OH})_2$ _____
15. $\text{Mn}(\text{HPO}_3)_2$ _____
16. $\text{V}_3(\text{AsO}_4)_4$ _____
17. $\text{Pb}(\text{C}_6\text{H}_5\text{COO})_4$ _____
18. TiO_2 _____
19. CuBr _____
20. FeP _____
21. $\text{Ti}(\text{C}_4\text{H}_4\text{O}_6)_2$ _____
22. $\text{Sb}(\text{ClO}_4)_3$ _____
23. OsO_2 _____
24. PtCO_3 _____

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- 25. $\text{Cr}(\text{BO}_3)_2$ _____
- 26. AuIO _____
- 27. CuHC_2O_4 _____
- 28. $\text{Sn}(\text{SCN})_2$ _____
- 29. $\text{Sb}_3(\text{AsO}_4)_5$ _____
- 30. $\text{Ni}(\text{BrO}_3)_2$ _____
- 31. $\text{V}(\text{CrO}_4)_2$ _____
- 32. $\text{Mn}(\text{CN})_2$ _____
- 33. $\text{Ti}_2(\text{Cr}_2\text{O}_7)_3$ _____
- 34. $\text{Cu}(\text{BrO}_4)_2$ _____
- 35. OsPO_3 _____
- 36. NiAsO_3 _____
- 37. Au_3PO_3 _____
- 38. $\text{Mo}(\text{CrO}_2)_3$ _____
- 39. $\text{Mn}(\text{CH}_3\text{COO})_3$ _____
- 40. $\text{Fe}_2(\text{S}_2\text{O}_3)_3$ _____
- 41. $\text{Cu}(\text{IO})_2$ _____
- 42. PdO_2 _____
- 43. MoP _____
- 44. TiPO_4 _____
- 45. OsS_2 _____
- 46. $\text{Au}(\text{AlO}_2)_3$ _____
- 47. $\text{Cr}(\text{CO}_3)_3$ _____
- 48. $\text{Sb}_2(\text{HPO}_4)_5$ _____
- 49. MnS _____
- 50. PbC_2O_4 _____

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Chemistry 11

Naming Compounds Worksheet - Hydrates

Directions: Name each of the following hydrates. Make sure you smile ☺

1. $\text{Cu}(\text{OH})_2 \cdot 5\text{H}_2\text{O}$ _____
2. $\text{CaO} \cdot 3\text{H}_2\text{O}$ _____
3. $\text{MgS} \cdot 6\text{H}_2\text{O}$ _____
4. $\text{Pb}(\text{SO}_4)_2 \cdot 2\text{H}_2\text{O}$ _____
5. $\text{K}_3\text{AsO}_4 \cdot 4\text{H}_2\text{O}$ _____
6. $\text{FeHPO}_4 \cdot \text{H}_2\text{O}$ _____
7. $\text{LiNO}_2 \cdot 8\text{H}_2\text{O}$ _____
8. $\text{Os}_2(\text{CO}_3)_3 \cdot 5\text{H}_2\text{O}$ _____
9. $\text{TiO} \cdot 7\text{H}_2\text{O}$ _____
10. $\text{Ba}(\text{ClO}_3)_2 \cdot 9\text{H}_2\text{O}$ _____
11. $\text{ScPO}_3 \cdot 8\text{H}_2\text{O}$ _____
12. $\text{Sb}(\text{BrO}_3)_5 \cdot 5\text{H}_2\text{O}$ _____
13. $\text{W}(\text{C}_6\text{H}_5\text{O}_7)_2 \cdot 10\text{H}_2\text{O}$ _____
14. $\text{Co}(\text{ClO})_2 \cdot \text{H}_2\text{O}$ _____
15. $\text{AuCNO} \cdot 3\text{H}_2\text{O}$ _____
16. $\text{Ca}(\text{NH}_2)_2 \cdot 9\text{H}_2\text{O}$ _____
17. $\text{Fe}(\text{IO}_2)_2 \cdot 4\text{H}_2\text{O}$ _____
18. $\text{Mo}(\text{BrO}_2)_2 \cdot 2\text{H}_2\text{O}$ _____
19. $\text{NaF} \cdot 8\text{H}_2\text{O}$ _____
20. $\text{AgCNO} \cdot 5\text{H}_2\text{O}$ _____
21. $(\text{NH}_4)_2\text{C}_2\text{O}_4 \cdot 6\text{H}_2\text{O}$ _____
22. $\text{CsClO}_2 \cdot 7\text{H}_2\text{O}$ _____
23. $\text{Zn}_3\text{N}_2 \cdot 10\text{H}_2\text{O}$ _____
24. $\text{Cr}(\text{H}_2\text{PO}_3)_6 \cdot 2\text{H}_2\text{O}$ _____

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Writing Chemical Formulas - Hydrates

Directions: Write the formula for each of the following compounds. Have fun ☺

1. Copper (II) sulphate octahydrate _____
2. Calcium oxide monohydrate _____
3. Manganese (IV) oxalate dihydrate _____
4. Gold (III) hydroxide tetrahydrate _____
5. Lead (IV) Aluminate pentahydrate _____
6. Silver bromide trihydrate _____
7. Titanium (III) borate hexahydrate _____
8. Molybdenum (III) phosphate heptahydrate _____
9. Tin (II) perchlorate octahydrate _____
10. Antimony (V) phosphite decahydrate _____
11. Chromium (VI) pyrophosphate dihydrate _____
12. Cobalt (III) chromite trihydrate _____
13. Zinc selenate monohydrate _____
14. Copper (I) iodate nonahydrate _____
15. Iron (III) carbonate pentahydrate _____
16. Osmium (IV) thiosulphate tetrahydrate _____
17. Lead (II) molybdate pentahydrate _____
18. Palladium (IV) arsenite hexahydrate _____
19. Antimony (III) hypochlorite pentahydrate _____
20. Vanadium (IV) acetate heptahydrate _____
21. Bismuth (III) hydrophosphite octahydrate _____
22. Tin (II) chlorate monohydrate _____
23. Titanium (IV) cyanate dihydrate _____
24. Nickel (II) hydrogen sulphate hexahydrate _____